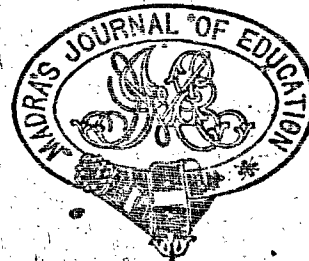


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### THE MONTH.

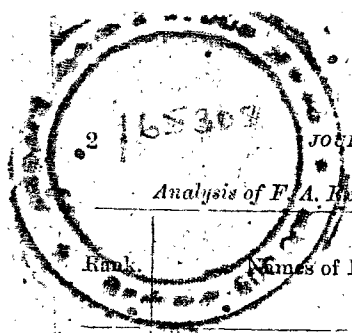
#### THE F. A. EXAMINATION OF LAST DECEMBER.

THE Results recently published of this examination show that 191 candidates have passed, viz., 13 in the First Class, and 178 in the Second Class, out of 516 candidates who appeared for the examination. The number passed this year is higher than the number passed in any preceding year, but then the candidates too were far more numerous. The percentage of those who passed to the number examined is 31, a higher percentage than that of last year, but much lower than the percentage for each of the three years preceding last year. When the new rule comes into force, and none but candidates from affiliated institutions are allowed to appear for this test, we shall of course expect to see a far larger percentage of passed men, although the total number of candidates must for some two or three years at least, we should imagine, fall considerably; for all the institutions from which candidates now appear will probably not be sent, there are 20 institutions sending up for examination. Of these 2, viz., the Protestant and the Sullivan's Gardens Seminary, are out of the list. Only 10 'Private' candidates fully passed the ordeal. The following is the position taken by the various Schools

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## Analysis of F. A. Examination Results for December 1877.

| Rank.     | Names of Institutions?             | Number passed. |               |
|-----------|------------------------------------|----------------|---------------|
|           |                                    | First Class.   | Second Class. |
| 1         | Combaconum College                 | 1              | 39            |
| 2         | Christian College, Madras          | 3              | 27            |
| 3         | Presidency College...              | 4              | 14            |
| 4         | Rajahmundry Provincial College     | 1              | 15            |
| 5         | Maharajah's College, Trevandrum    | 1              | 12            |
| 6         | Calicut Provincial School          | 3              | 9             |
| 7         | S. P. G. High School, Tanjore      |                | 9             |
| 8         | Central College, Bangalore...      |                | 9             |
| 9         | High School, Ernaaculam            |                | 7             |
| 10        | Mangalore Provincial School        |                | 6             |
| 11        | St. Joseph's College, Negapatam    |                | 5             |
| 12        | High School, Coimbatore            |                | 4             |
| 13        | Noble High School, Masulipatam     |                | 3             |
| 14        | Maharajah's College, Mysore        |                | 3             |
| 15        | Bishop Cotton's College, Bangalore |                | 2             |
| 16        | S. P. G. High School, Trichinopoly |                | 2             |
| 17        | Dorseton Protestant College        |                | 1             |
| 18        | High School, Shimoga               |                | 1             |
| 19        | Private study                      |                | 10            |
| Totals... |                                    | 13             | 178           |

The following brings together, for the chief institutions, the results for the seven years during which the examination has been at its present standard:—

| ***** |  |  |  |  |  |  | Number passed in |       |
|-------|--|--|--|--|--|--|------------------|-------|
|       |  |  |  |  |  |  | 1872.            | 1873. |
|       |  |  |  |  |  |  | 1874.            | 1875. |
|       |  |  |  |  |  |  | 1876.            | 1877. |
|       |  |  |  |  |  |  | Total.           |       |
|       |  |  |  |  |  |  | 17               | 20    |
|       |  |  |  |  |  |  | 22               | 30    |
|       |  |  |  |  |  |  | 29               | 40    |
|       |  |  |  |  |  |  | 183              |       |
|       |  |  |  |  |  |  | 8                | 18    |
|       |  |  |  |  |  |  | 24               | 28    |
|       |  |  |  |  |  |  | 27               | 30    |
|       |  |  |  |  |  |  | 143              |       |
|       |  |  |  |  |  |  | 16               | 12    |
|       |  |  |  |  |  |  | 27               | 21    |
|       |  |  |  |  |  |  | 20               | 18    |
|       |  |  |  |  |  |  | 133              |       |
|       |  |  |  |  |  |  | 9                | 9     |
|       |  |  |  |  |  |  | 17               | 22    |
|       |  |  |  |  |  |  | 11               | 13    |
|       |  |  |  |  |  |  | 90               |       |
|       |  |  |  |  |  |  | 4                | 8     |
|       |  |  |  |  |  |  | 9                | 12    |
|       |  |  |  |  |  |  | 2                | 12    |
|       |  |  |  |  |  |  | 53               |       |
|       |  |  |  |  |  |  | 9                | 8     |
|       |  |  |  |  |  |  | 9                | 5     |
|       |  |  |  |  |  |  | 9                | 44    |
|       |  |  |  |  |  |  | 7                | 5     |
|       |  |  |  |  |  |  | 9                | 6     |
|       |  |  |  |  |  |  | 1                | 9     |
|       |  |  |  |  |  |  | 39               |       |
|       |  |  |  |  |  |  | 4                | 6     |
|       |  |  |  |  |  |  | 8                | 4     |
|       |  |  |  |  |  |  | 4                | 6     |
|       |  |  |  |  |  |  | 33               |       |
|       |  |  |  |  |  |  | 3                | 7     |
|       |  |  |  |  |  |  | 6                | 16    |
|       |  |  |  |  |  |  | 32               |       |
|       |  |  |  |  |  |  | 3                | 9     |
|       |  |  |  |  |  |  | 5                | 7     |
|       |  |  |  |  |  |  | 2                | 1     |
|       |  |  |  |  |  |  | 30               |       |
|       |  |  |  |  |  |  | 3                | 2     |
|       |  |  |  |  |  |  | 5                | 3     |
|       |  |  |  |  |  |  | 23               |       |
|       |  |  |  |  |  |  | 3                | 1     |
|       |  |  |  |  |  |  | 7                | 5     |
|       |  |  |  |  |  |  | 17               |       |
|       |  |  |  |  |  |  | 4                | 7     |
|       |  |  |  |  |  |  | 4                | 2     |
|       |  |  |  |  |  |  | 17               |       |
|       |  |  |  |  |  |  | 1                | 2     |
|       |  |  |  |  |  |  | 5                | 2     |
|       |  |  |  |  |  |  | 3                | 14    |
|       |  |  |  |  |  |  | 2                |       |
|       |  |  |  |  |  |  | 5                | 1     |
|       |  |  |  |  |  |  | 5                | 14    |
|       |  |  |  |  |  |  |                  | 4     |
|       |  |  |  |  |  |  |                  | 7     |
|       |  |  |  |  |  |  |                  | 11    |
|       |  |  |  |  |  |  |                  | 7     |
|       |  |  |  |  |  |  |                  | 2     |
|       |  |  |  |  |  |  |                  | 2     |
|       |  |  |  |  |  |  |                  | 7     |

## Particulars of Failures in December 1877.

|                                     |     |
|-------------------------------------|-----|
| Number failed in English            | 238 |
| Do Optional language                | 43  |
| Do History                          | 131 |
| Do Arithmetic, Algebra and Geometry | 186 |
| Do Trigonometry and Euclid, Book XI | 165 |
| Do Physiology                       | 117 |
| Do One subject only                 | 69  |
| Do Two subjects                     | 89  |
| Do Three do                         | 53  |
| Do Four do                          | 58  |
| Do Five do                          | 38  |
| Do All do                           | 9   |
| Absent from the Examination (whole) | 9   |

Total number failed 325

The following is a comparison of Failures for six years:—

| Failed in                        | In the Examination of December. |       |       |       |       |       |
|----------------------------------|---------------------------------|-------|-------|-------|-------|-------|
|                                  | 1872.                           | 1873. | 1874. | 1875. | 1876. | 1877. |
| English                          | 130                             | 102   | 113   | 145   | 255   | 238   |
| Optional Language                | 22                              | 11    | 29    | 28    | 30    | 43    |
| History and Geography            | 107                             | 25    | 25    | 27    | 131   | 131   |
| Arithmetic, Algebra and Geometry |                                 |       |       |       | 148   | 186   |
| Trigonometry and Euclid, Bk. XI  |                                 |       |       |       | 108   | 165   |
| Physiology                       |                                 |       |       |       | 42    | 117   |
| One subject only                 | 69                              | 78    | 78    | 81    | 81    | 69    |
| Two subjects                     | 47                              | 49    | 42    | 81    | 85    | 89    |
| Three do                         | 34                              | 22    | 20    | 29    | 50    | 53    |
| Four do                          | 11                              | 7     | 9     | 7     | 39    | 58    |
| Five do                          |                                 |       |       |       | 24    | 38    |
| All do                           | 3                               | 1     | 3     | 2     | 7     | 9     |
| Absent from the Examination      |                                 | 13    | 11    | 18    | 11    | 9     |

## THE LATE MATRICULATION EXAMINATION.

The number of candidates for this examination goes on increasing year by year. For the year 1877, the number registered was 2,495. The examination, from the results just published, appears to have been somewhat easier than usual, although only about one-third of the candidates have now succeeded in passing the test. In 1876, considerably more than a half were successful. But it must be remembered that the classes for 1877, owing to the easy nature of the previous examination, were composed almost entirely of

new boys, and as comparatively few of the boys who have now passed the examination had failed before, the ratio of one-third of successful candidates to the whole number examined must in these circumstances be considered large.

Combaconum again wins the race in an easy canter, passing 75 candidates, out of which the astonishing number of 28 are in the First Class; there is a gallant struggle between the Christian College and the Presidency College for the second position, and they come up at length, neck and neck, each passing 2 candidates in the first, and 31 in the second class, while thundering upon their heels come Trivandrum and Trichinopoly, a good fourth and a good fifth; Pachiappa's School and the Schools at Mangalore, Tanjore and Coimbatore have all done well, and have all the honour of representatives in the First Class. Calicut has fallen from 33 passed last time with 6 in the First Class, to 22 all in the second class. Rajahmundry too has fallen considerably, as has also the Native High School at Combaconum. The exceptionally easy nature of the examination in 1876 must however be borne in mind.

The Zillah school of Madura has done well, taking the same relative position in the list of schools as last year, and passing 3 boys in the First Class. What results other schools have achieved will appear from the following Analysis:—

*Analysis of the Matriculation list for the Examination of December 1877*

| Rank. | Names of Institution.               | Number passed. |               |        |
|-------|-------------------------------------|----------------|---------------|--------|
|       |                                     | First Class.   | Second Class. | Total. |
| 1     | Combaconum College...               | 23             | 52            | 75     |
| 2     | Christian College Madras...         | 2              | 31            | 33     |
| 3     | Presidency College...               | 2              | 31            | 33     |
| 4     | Rajah's College, Trivandrum...      | 1              | 30            | 31     |
| 5     | S. P. G. High Sch., Trichinopoly... | 3              | 27            | 30     |
| 6     | Pacheappah's High Sch., Madras...   | 5              | 23            | 28     |
| 7     | Provincial School, Mangalore...     | 1              | 27            | 28     |
| 8     | S. P. G. High School, Tanjore...    | 3              | 24            | 27     |
| 9     | High School, Coimbatore...          | 2              | 22            | 24     |
| 10    | Provincial School, Calicut...       | 2              | 22            | 22     |
| 11    | Do. College, Rajahmundry...         | 2              | 18            | 20     |
| 12    | Native High Sch., Combaconum...     | 1              | 18            | 19     |
| 13    | Zillah School, Madura...            | 3              | 14            | 17     |
| 14    | Hindu High Sch., Masulipatam...     | ...            | 15            | 15     |
| 15    | Town School, Combaconum...          | 5              | 8             | 13     |
| 16    | St. Joseph's Col., Negapatam...     | 1              | 11            | 12     |

*Analysis of the Matriculation list. — (Continued.)*

| Rank. | Names of Institution.                 | Number passed. |               |        |
|-------|---------------------------------------|----------------|---------------|--------|
|       |                                       | First Class.   | Second Class. | Total. |
| 17    | Wes. Miss. H. Sch., Manargudi...      | 3              | 7             | 10     |
| 18    | H. Car's. Gramr. Sch., Madras...      | 3              | 6             | 9      |
| 19    | S. P. G. High School, Vepery...       | 1              | 8             | 9      |
| 20    | Zillah School, Chittoor...            | 1              | 8             | 9      |
| 21    | Rajah's High School, Mysore...        | 1              | 8             | 9      |
| 22    | Central College, Bangalore...         | 1              | 8             | 9      |
| 23    | Zillah School, Tellicherry...         | ...            | 9             | 9      |
| 24    | ..., Salem...                         | ...            | 9             | 9      |
| 25    | Pacheappah's Br. Sch., Chidambaram... | ...            | 9             | 9      |
| 26    | High School, Ernaculam...             | 4              | 4             | 8      |
| 27    | Zillah School, Berhampore...          | 2              | 6             | 8      |
| 28    | H. Proprietary School, Madras...      | 2              | 6             | 8      |
| 29    | Wes. Educ. Inst., Bangalore...        | 1              | 7             | 8      |
| 30    | F. C. M., Nellore...                  | 1              | 7             | 8      |
| 31    | High School, Palghat...               | 1              | 8             | 8      |
| 32    | C. M. S. College, Cottayam...         | 0              | 8             | 8      |
| 33    | Native High School Negapatam...       | 0              | 8             | 8      |
| 34    | Church of Scot. Miss., Madras...      | 0              | 8             | 8      |
| 35    | Noble H. Sch., Masulipatam...         | 1              | 6             | 7      |
| 36    | Zillah School, Cuddalore...           | 1              | 6             | 7      |
| 37    | Dowton Protestant College...          | 1              | 6             | 7      |
| 38    | L. M. School, Bangalore...            | ...            | 7             | 7      |
| 39    | Mission School Nursapore...           | ...            | 7             | 7      |
| 40    | High School, Vizianagaram...          | 2              | 4             | 6      |
| 41    | St. Joseph's Ins., Cuddalore...       | 1              | 5             | 6      |
| 42    | St. Andrew's School, Bangalore...     | ...            | 6             | 6      |
| 43    | Bishop Cotton's Col., Bangalore...    | 2              | 3             | 5      |
| 44    | Saint Thomé Seminary...               | 1              | 4             | 5      |
| 45    | Wes. Miss. School, Mysore...          | 1              | 4             | 5      |
| 46    | Sawyerpuram Seminary...               | 1              | 4             | 5      |
| 47    | L. M. School, Vizagapatam...          | 1              | 4             | 5      |
| 48    | Hindu High Sch., Vizagapatam...       | 1              | 4             | 5      |
| 49    | Malabar High School...                | 1              | 4             | 5      |
| 50    | High School, Shimoga...               | 0              | 5             | 5      |
| 51    | Wes. Miss. School, Royapettah...      | ...            | 5             | 5      |
| 52    | Free Ch. Miss., Conjeeveram...        | ...            | 5             | 5      |
| 53    | S. P. G., Sullivan's Gardens...       | ...            | 5             | 5      |
| 54    | C. M. S. E. Ins., Palamcottah...      | ...            | 5             | 5      |
| 55    | St. Mary's Seminary, Madras...        | 1              | 3             | 4      |
| 56    | Pacheap. Breh' Sch., Conjeeveram...   | 1              | 3             | 4      |
| 57    | Hindu A. V. School, Nellore...        | ...            | 4             | 4      |
| 58    | Zillah School, Chenglepett...         | ...            | 4             | 4      |
| 59    | A. V. School, Cannanore...            | ...            | 4             | 4      |
| 60    | Hindu School, Cocanada...             | ...            | 4             | 4      |



## Analysis of the Matriculation.—(Continued.)

The following table brings together the results for the chief Institutions for the last ten years :—

| Rank. | Names of Institution.                   | Number passed. |               |        |
|-------|-----------------------------------------|----------------|---------------|--------|
|       |                                         | First Class.   | Second Class. | Total. |
|       | District School, Tumkur                 | ...            | 4             | 4      |
|       | L. M. School, Salem                     | ...            | 4             | 4      |
|       | Wes. Miss. School, Negapatam            | ...            | 4             | 4      |
| 64    | Zillah School, Cuddapah                 | 1              | 2             | 3      |
|       | Provincial School, Bellary              | 1              | 2             | 3      |
| 66    | L. M. School, Madras                    | ...            | 3             | 3      |
|       | Central School, Madras                  | ...            | 3             | 3      |
| 68    | S. P. G. School, Porayar                | 1              | 1             | 2      |
| 69    | St. Andrew's School, Madras             | ...            | 2             | 2      |
| 70    | Hindu A. V. School, Tinnevely           | ...            | 2             | 2      |
|       | Native High School, Manargudi           | ...            | 2             | 2      |
|       | St. Aloysius School, Vizagapatam        | ...            | 2             | 2      |
|       | S. P. G. School, Ramnad                 | ...            | 2             | 2      |
|       | F. C. M. School, Chengleput             | ...            | 2             | 2      |
|       | High School, Saidapett                  | ...            | 2             | 2      |
|       | District School, Hassam                 | ...            | 2             | 2      |
|       | Zillah School, Kurnool                  | ...            | 2             | 2      |
|       | Literary Excelsior, Palamcottah         | ...            | 2             | 2      |
| 79    | Winchester College, England             | 1              | ...           | 1      |
|       | Breek's Memorial Sch., Ootacamund       | 1              | ...           | 1      |
|       | Central School, Trincomallee and Jaffna | 1              | ...           | 1      |
|       | H. H. Nizam's, A. V. Sch., Hyderabad    | ...            | 1             | 1      |
|       | I. M. School, Bellary                   | ...            | 1             | 1      |
|       | Taluq School, Amalapur                  | ...            | 1             | 1      |
|       | Trivandrum and Tinnevely                | ...            | 1             | 1      |
|       | A. V. School, Bezvaddah                 | ...            | 1             | 1      |
|       | L. M. School, Viznagrum                 | ...            | 1             | 1      |
|       | District School, Chittaldroog           | ...            | 1             | 1      |
|       | Wardlaw Institution, Bellary            | ...            | 1             | 1      |
|       | Presidency School, Calicut              | ...            | 1             | 1      |
|       | District School, Chickmagalur           | ...            | 1             | 1      |
|       | C. M. School, Ellore                    | ...            | 1             | 1      |
|       | Hindu A. V. School, Cocanada            | ...            | 1             | 1      |
|       | Lutheran Miss. Sch., Tranquebar         | ...            | 1             | 1      |
|       | A. V. School, Triplicane                | ...            | 1             | 1      |
|       | Private stud.                           | ...            | 27            | 27     |
|       | Total...                                | 96             | 712           | 808    |

| Names of Institutions.                   | Number passed in |      |      |      |      |      |      |      |      |      |
|------------------------------------------|------------------|------|------|------|------|------|------|------|------|------|
|                                          | 1867             | 1868 | 1869 | 1870 | 1871 | 1872 | 1873 | 1874 | 1875 | 1876 |
| Combaconum College                       | 14               | 53   | 54   | 62   | 29   | 53   | 76   | 73   | 58   | 80   |
| Presidency College                       | 33               | 29   | 30   | 35   | 22   | 7    | 24   | 28   | 29   | 46   |
| Christian College, Madras                | 2                | 9    | 25   | 20   | 24   | 26   | 33   | 38   | 22   | 50   |
| Rajah's College, Trivandrum              | 12               | 14   | 15   | 14   | 28   | 30   | 36   | 31   | 40   | 18   |
| S. P. G. High School, Tanjore            | 9                | 14   | 16   | 20   | 12   | 15   | 35   | 30   | 18   | 14   |
| Do. Trichinopoly                         | 5                | 15   | 7    | 9    | 8    | 22   | 18   | 25   | 21   | 51   |
| Do. Vepery                               | 4                | 3    | 3    | 3    | 3    | 10   | 7    | 11   | 4    | 16   |
| Provincial School, Calicut               | 11               | 5    | 11   | 18   | 15   | 28   | 29   | 30   | 32   | 39   |
| Do. Mangalore                            | 2                | 11   | 10   | 15   | 19   | 15   | 23   | 15   | 20   | 28   |
| Do. Bellary                              | 10               | 8    | 12   | 8    | 20   | 12   | 15   | 12   | 4    | 14   |
| Do. Rajahmundry                          | 2                | 2    | ...  | 6    | 4    | 7    | 14   | 20   | 13   | 20   |
| Pacheappah's High School, Madras         | 13               | 18   | 14   | 19   | 16   | 20   | 14   | 30   | 20   | 14   |
| High School, Bangalore                   | 13               | 11   | 11   | 7    | 11   | 10   | 8    | 11   | 6    | 12   |
| High School, Coimbatore                  | 4                | 10   | 5    | 7    | 4    | 12   | 12   | 7    | 23   | 29   |
| Zillah School, Chittoor                  | 11               | 5    | 9    | 6    | 10   | 14   | 7    | 13   | 10   | 8    |
| Do. Madras                               | 10               | 6    | 4    | 5    | 5    | 14   | 7    | 10   | 12   | 33   |
| Do. Salem                                | 8                | 5    | 7    | 5    | 6    | 7    | 3    | 9    | 9    | 9    |
| Do. Cuddapah                             | 3                | 3    | 6    | ...  | 9    | 8    | ...  | 2    | 1    | 4    |
| Do. Cuddalore                            | ...              | 3    | 3    | 1    | 2    | 2    | 1    | 3    | 5    | 12   |
| Do. Kurnool                              | ...              | 1    | ...  | 1    | 2    | 3    | 3    | 4    | 2    | 7    |
| Do. Berhampore                           | 3                | 1    | ...  | ...  | ...  | 3    | 1    | 7    | 8    | 12   |
| Dowton Protestant College, Madras        | 8                | 4    | 7    | 9    | 8    | 12   | 9    | 7    | 3    | 8    |
| St. Joseph's College, Negapatam          | 4                | 2    | 7    | 9    | 7    | 12   | 11   | 10   | 11   | 14   |
| Noble High School, Masulipatam           | 4                | 4    | 8    | 4    | 10   | 11   | 8    | 5    | 7    | 16   |
| Bishop Corrie's Grammar School, Madras   | 4                | 0    | 6    | 7    | 8    | 7    | 11   | 11   | 13   | 8    |
| High School, Sydapett                    | 5                | 4    | 8    | 12   | 6    | 3    | 4    | 5    | 2    | 2    |
| Wesleyan School, Bangalore               | 6                | 0    | 2    | 3    | 9    | 7    | 5    | 13   | 5    | 22   |
| Hindu Anglo-Vernacular School, Tinnevely | 0                | 5    | 3    | 2    | 5    | 5    | 4    | 13   | 13   | 20   |
| Sullivan's Gardens Seminary              | 10               | 2    | 8    | 0    | 4    | 1    | 3    | 2    | 2    | 4    |
| Rajah's School, Mysore                   | 0                | 5    | 4    | 4    | 5    | 4    | 5    | 2    | 2    | 4    |
| Do do Eraculam                           | 0                | 2    | 3    | 6    | 3    | 6    | 6    | 11   | 12   | 8    |
| Pacheappah's Branch School, Conjevaram   | 0                | 4    | 7    | 4    | 5    | 4    | 2    | 8    | 4    | 11   |
| Hindu Ang-Vernacular School, Masulipatam | 1                | 0    | 4    | 2    | 8    | 6    | 4    | 8    | 11   | 12   |
| London Mission School, Madras            | 7                | 0    | 3    | 4    | 2    | 5    | 2    | 4    | 6    | 7    |
| Wesleyan Anglo Vernacular School, Madras | 3                | 4    | 3    | 1    | 1    | 3    | 7    | 8    | 5    | 13   |
| Anglo-Vernacular School, Cannanore       | 6                | 2    | 4    | 6    | 3    | 0    | 1    | 0    | 0    | 8    |
| Wesleyan Mission, Negapatam              | 2                | 3    | 0    | 3    | 2    | 4    | 7    | 8    | 7    | 10   |
| Union School, Palghant                   | 0                | 2    | 3    | 2    | 0    | 7    | 6    | 14   | 9    | 20   |
| London Mission School, Bangalore         | 0                | 6    | 1    | 1    | 3    | 3    | 3    | 4    | 8    | 15   |
| St. Mary's Seminary, Madras              | 3                | 0    | 1    | 1    | 5    | 2    | 6    | 5    | 5    | 12   |
| Central School, Narsapur                 | 2                | 0    | 2    | 0    | 2    | 4    | 2    | 0    | 0    | 7    |
| Hindu Ang-Vernacular School, Vizagapatam | 1                | 5    | 0    | 4    | 1    | 1    | 3    | 6    | 2    | 6    |
| Sawyerpuram Seminary                     | 0                | 1    | 0    | 3    | 2    | 3    | 1    | 0    | 0    | 10   |

## THE MATRICULATION EXAMINATION PAPERS.

Last month we made a few remarks on the papers set on English Grammar and Literature at the late Matriculation Examination. We now proceed to notice briefly some of the papers set in other subjects.

At the first glance at the vernacular examination papers, we are again struck with the fact that English is treated as if it were the vernacular language of the candidates. Instead of the questions being proposed in the vernaculars, they are proposed in English; and not unfrequently a youth well read in his vernacular, fails in that subject, because, from an imperfect knowledge of English, he is unable to see the point of a question. Such a youth, it may be said, does not deserve to pass, and we may perhaps grant that he does not; but then the published results should show him that he fails, not because he has an insufficient knowledge of his vernacular, but because he is deficient in his knowledge of English. Under the present system, a youth who may equal a Pandit in Tamil or in Telugu scholarship is set down as having failed in the very subject in which he is so proficient. To illustrate our remarks, we may point out that at the late examination many candidates failed to answer the second question in the Tamil paper, simply because they did not understand the use of the word "character" to denote a personage in a drama or in a poem. The question is as follows:—

Enumerate the several characters introduced into Bharata Venba (sic) within the portion prescribed for the Examination, explain fully in Tamil, what part is played by each of those characters, and account, as far as you can, for his taking such part.

Now as the answer to this question is very properly required to be given in Tamil, why should not the question itself be proposed in Tamil? In the paper on Tamil Grammar and Composition, both questions and answers should undoubtedly be given in Tamil. But the questions every year are as far as possible proposed in English, and in most cases, it is left to the option of the candidate whether he gives the answer in his vernacular, in English, or in a mixture of both. The case is of course different when we come to the paper on reciprocal Translation, and the marks in it we think should therefore be entered under a separate head, so that a candidate may know when he fails in Translation, and when he has passed in general knowledge of his vernacular.

Then again, if the questions in the vernacular papers are to be proposed by Native Examiners in English, as these questions are adopted by the University, they should be models of correctness, instead of examples of unidiomatic English, as they too frequently are. For example we find in the Madras University Calendar that a question proposed by a Hindu Master of Arts, who was examiner in Sanskrit not a hundred years ago, runs thus:—

Translate the following into Sanskrit idiomatically:—

*He asked me my welfare (!)*

We have observed no such glaring instance of false English idiom in the papers set by the vernacular examiners this year, but there are nevertheless many minor inaccuracies that a European scholar would not have allowed to pass, if the questions had been submitted for his revision before they were printed. For instance no Englishman would write "What was the origin of Panchatantra?" Speaking of Cowper's Poem, we should not ask "what was the origin of Task?" we should insert the article and say "the origin of the Task." We do not say "Homer wrote Iliad," or "Virgil wrote Æneid," but we are verily jealous of the definite article. This is a matter, however, in which we fear it is in vain to expect Hindus, even graduates, to sympathize with us.

We notice in the Tamil question papers the same defect that we have pointed out in the English papers, a defect arising we presume from the neglect of carefully comparing the two parts to see how they would properly unite to form a whole. Thus we find the question "How is பெறு formed?" a question which is marked (d) in Part I., actually answered for the candidate at the end of Part II; where he is asked to form from பெறு a சொழிப்பெயர் without விருதி. But the chief fault of the Tamil paper is its unreasonable length. Some of the questions might have been omitted and others shortened. Question XI., for instance, is uselessly long as a test in Sandhi. A candidate who could write the first half of it correctly, would find only just the same points of difficulty in the latter half. Then again the mistakes set for correction are so unusual that they at once strike the eye. One example moreover which is given as incorrect is in reality correct:—யோக்கியமான மனிதன் is as good as யோக்கியமான மனிதன் and there is classical authority for such expressions. Compare the following lines from the Kural:—

“இல்லதெனில்லவன் மாண்பானுலன் ளதென்  
இல்லவன் மாணுக்கை.”

(மாண்பு எனக்குணத்தின்பெயர் குணியின்மேல் நின்றது.)

The Telugu paper set by Rangaya Chetti Garu is, like most of the papers set by this careful examiner, a good testing paper. It indeed appears long, but many of the questions can be answered in a very few words. We have however a few minor faults to point out in the questions. In the latter part of Question II, the examiner after desiring the candidate to criticize the use of a word in a certain compound goes on to ask “What ought to be the proper word in its place,” and then adds “show the propriety or otherwise of using it.” Surely one portion of this question suggests the answers to the other portions.

Question VI is ambiguous, and we are unable to tell with any certainty what the examiner means. He asks the candidates, to “explain briefly *how*  $\kappa$  appears in each of the following words.” Does the examiner here use “*how*” in the sense of *why*? or does he merely wish to enquire what are the different *forces* of  $\kappa$  in each of the words quoted? Some candidates might translate the phrase “*how*  $\kappa$  appears” into Telugu thus—‘*ఎక్కడనున్నది*’ and they might then humorously reply ‘*బహువాననున్నది*.’

In Question VII, we are not sure that it is in good taste for the examiner to ask young boys to explain the nature of the ceremony *punsavanamu*, a domestic and religious rite observed when a woman perceives the first signs of a living conception. It is true that the word occurs in the Text, it is also true that young Hindus are very precocious, and that as Hindu Pandits as a rule delight to expatiate upon such matters as these, the boys may most probably have had the nature of the ceremony very thoroughly explained to them, but still we think that a University Examiner should preserve a dignified reticence on such delicate subjects. Mr. Rangaya Chetti must however have had a difficult task to keep clear of the mud in the most abominable episode of that most abominable book the *Dasakumara charitra*, and we congratulate him that he has, upon the whole, performed this task so discreetly.

ARITHMETIC.—This is a paper for two hours and a half. There are nine questions in it. With the exception of one

question (number VII) they are fair and not too difficult, but perhaps a little too tedious. “Question VII is certainly objectionable. It is a question on “Stocks,” a portion of the subject not prescribed for the Matriculation Examination, vide University Calendar for 1877-1878, page 29.”

ALGEBRA.—This is a paper for one hour and a half, and so we are not disappointed at finding it short; but we are certainly a little surprised at finding it so very simple.

There is one question on factors, one on fractions, one identity, one exercise on extracting the square root, and one simple equation. The last question is indeed a very poor specimen of a problem. Almost the only exercise for thought that it contains is its ambiguous wording, by which several candidates were misled. “Ten years ago, I was five times as old as my son.” As my son *now* is? or, as my son *then* was? The ellipsis may be supplied either way; the examiner doubtless means the latter, but as we have already remarked, questions proposed in a foreign language to Hindus, should be most carefully worded to prevent misconception. Time upon time, youths who are excellent arithmeticians and algebraists complain that they have failed in solving problems because the English wording is too difficult or obscure for them to understand. As the object of these papers is not to test again the candidate's knowledge of English, why, we would once more ask, should not such problems be proposed in the candidate's own vernacular. Unlike the papers set in previous years on this subject, this one appears to err on the side of easiness.

GEOMETRY.—There are four propositions and four deductions in this paper, to be answered in two hours. The shortness of the paper forms a remarkable contrast to the length of the paper set in this subject last year.

The Syllabus in the University Calendar directs that the riders should be *easy* deductions, and these here set certainly do not appear too difficult. Candidates, we should have thought, might have secured good marks from this paper, but we understand that not even 5 per-cent. of the examinees, as a rule, attempt even a single deduction. One of the mathematical examiners in the last Matriculation Examination of the Bombay University makes the following remarks, and we conceive they might be made with equal truth of the great bulk of the candidates for examination who go up from year to year in this Presidency:—

“Much has been said about the superiority in Mathematics of

Hindu students over Europeans of the same age. In one respect I admit superiority,—their memory is more retentive, and so they succeed generally in reproducing book-work with tolerable correctness. But in handling problems or riders they do not approach even remotely to English boys. In a good school or College in England, or in any assembly of well-educated boys over sixteen years of age, it never could happen that a short Euclid paper like this year's Matriculation paper should be set to 433 boys, and easy riders like those on questions (8) and (9) be left unattempted. I have no hesitation in asserting that at least 100 boys would have attempted, and many of them would have succeeded in solving, these problems. The same feature is apparent in all examinations in this country, whether held in school, college, or university. So long as the character of the examination paper is such as will test the memory only, our native students acquit themselves well,—often brilliantly, but as soon as they are compelled to quit leading-strings, and depend on their own courage and resources, in originality of thought, ingenuity and pluck, they cannot be compared for a moment with European students of the same standing.

**PHYSICS.**—This paper seems to us a paper in which a candidate who had made a careful study of the Physics Primer might have easily secured the minimum of marks. Several of the questions, while capital tests, are not beyond youths who have studied only the Primer prescribed by the University. We fear however that many who could have answered the second part of question II were deterred from attempting it, because they thought a numerical comparison was required. Question III, few candidates would be in a position to answer; a boy who had kept to the Primer, if he said that the mercury expands on a warm day, and therefore rises a little higher in the barometrical tube than on a cold day, would expect to gain a mark or two, and we feel almost inclined to say that if he had studied only the Primer and gave this answer, he would deserve a mark, for he could not know the fact that when the temperature of mercury is above 60° Fahrenheit, it gives out a vapour, that, filling the vacuum that should exist at the top of the tube, by reason of its elasticity, depresses the column of mercury by partly counterbalancing the external pressure.

The second part of question V is an excellent testing question, and the candidate who could give the reason why the bladder must sink to the bottom of the vessel, would not we think, be found at the bottom of the class list.

**HISTORY AND GEOGRAPHY.**—These papers appear to be fair average papers, and call for no special remark.

The new rate of school fees in Government and Aided Schools has now come into operation. We fear the attendance may be for some time injuriously affected thereby in many districts where the people are still suffering from the effects of the famine.

We believe that the Syndicate intends to make a rule against the common practice among Examinees of fastening additional sheets of paper to the answer books supplied to them by the University, and in future to require candidates to answer the questions within the limits of the writing paper given to them at the commencement of each sitting. This will effectually put a stop to some mal-practices believed at present to exist, and will also make candidates pay greater attention to condensation, and to neatness of execution in their answers. The "sprawling" and illegible writing in some stations is at present disgraceful.

The Reverend W. H. Kay, B.A., and the Rev. W. H. Blake, M.A. have been appointed by the Madras Committee to succeed Mr. Marsh, the late Principal of the S. P. G. High School at Tanjore. Mr. Kay, we understand, is a nephew of Dr. Kay for many years Principal of Bishop's College, Calcutta. We hope that the Tanjore College will go on and prosper under the guidance of these gentlemen.

Mr. Thomson has been re-elected a member of the University Syndicate in place of Mr. Porter, who has returned to Combaconam.

We much regret to learn that a scheme proposed by Col. Macdonald for removing some of the existing anomalies that we have pointed out in the present system of examination, in the English and Vernacular subjects was negatived at the meeting of the Senate held on the 23rd ultimo.

We learn that a very large number of candidates at the late University Examination forfeited papers through neglecting to place their names and numbers at the head of their answers as directed. It is astonishing to think that many who have duly observed the rule at the beginning of the examination, become careless towards the end, and neglect it.

MADRAS as well as Bombay has now the honour of having a young lady Undergraduate in her University. Miss Edith

Annette Gow of Bangalore has passed the recent examination for Matriculation, and has taken a very creditable position in the First Class. We learn that this young lady was for some time a pupil in Miss Ferguson's School, from whence she proceeded to Bishop Cotton's School. Two young ladies have passed the Matriculation Examination of the Bombay University, one of them, Miss Conway, has taken a very high position in the first class, being sixth in order of merit, out of upwards of a thousand competitors.

SUTHERLAND Orr, of Winchester College, the youth who this year holds the proud position of Senior Matriculate in the Madras University, is an English boy, fresh we believe, from *dulce domum*. Winchester College is one of the oldest and most famous of English Schools. It was founded in 1387 by William of Wykeham, Bishop of Winchester, whose motto *MANNERS MAKETH MAN* is the motto of the College. On the West wall of the school-room, says Mr. Staunton, upon a large tablet are painted a mitre and crozier, to represent the rewards of clerical learning; a pen and inkhorn, and a sword, the insignia of civil and military pursuits; and a long Winton-rod, typifying the punishment of those too indolent to devote themselves either to study or to active life. Beneath each emblem is the appropriate legend—"Aut Disce", "Aut Discede"; "Manet Scors Tertia, Cædi." "Either learn; or depart hence; the third choice is to be chastised." Or, as it has been jocosely rendered:—

"Study hard, or else be joggng,  
Or you'll get a plaguy flogging."

The hymn "*Dulce Domum*," which is invariably sung on the last six Saturdays of the "long half" before "evening hills," is connected with a very painful story. Three centuries ago, it is said, a friendless scholar was left alone at the College, during holidays. Oppressed with grief at the loss of his companions, he with difficulty, contrived to wear away a few weeks of the vacation; but at length the solitude became too much for him, and the desolate child, after carving the words, "*Dulce Domum*" on the bark of a tree, took to his lonely room and died of a broken heart. The Hymn begins:—

"Concinamus, O sodales!

Eja! quid silemus?

Nobile cautium!

Dulce melos, domum!

Domum, domum, resonemus!

Chorus.

"Domum, domum, dulce domum!

Domum, domum, dulce domum!

Dulce, dulce, dulce domum!

Dulce domum, resonemus!"

TRANSLATION. A teacher of much experience writes:—

The exercise which is done perhaps with the least care in our schools is Translation, an exercise which deserves more care than any other lesson as it is the only means by which a foreigner can be taught accuracy of expression in English, and to weigh carefully the force of the words he uses. It is needless to add; that some of the

greatest masters of English owe their excellence in that language to the exercises in translation from the classical languages, which they had to do in school, and at the University. The present Professor of Latin in the University of Cambridge, when classical lecturer in St. John's, used to say, "We don't want literal translations in bald English, but we want what the author would have said, had he written in English." It is a mistake to suppose that an examiner wants a word for word translation. He can readily tell, without such a translation, whether the passage is understood or not, for no one can make a fair rendering in another language of a passage which he does not understand. On the other hand, the student should guard against the introduction of too much foreign matter; but the rule laid down by Professor Mayor is perhaps the best that can be given as a safeguard in either direction.

AN ARMENIAN SCHOOL.—The following day I went to see the Armenian Schools. In one of them I found 200 girls who, for Turkey, were receiving a fair education. Most of them could read and write. A class for learning embroidery was well attended, some of the elder girls' work being very neatly finished. There were two Mahomedan children in a sewing class, and I was informed that many of the Mussulmans had expressed a wish to send their children to the school.

"Perhaps you would like to ask the boys some questions," said a priest who accompanied me through the building.

Now if there is one thing I dislike, it is being turned into an examiner. There is always a chance of the boys knowing a great deal more than the amateur setter of questions. However, as the clergyman pressed me I tried to remember some of the sums which I had once learned under the tuition of my highly esteemed old master, Mr. Marillier of Harrow.

The herting and a half sum would have been too easy; however, I bethought myself of another.

"Well," said the priest, a little impatiently, they are waiting for you."

There was a dead pause, and I gave the worthy divine the following question. If one man can mow a field in three days, and another man in four, how long will they be doing the work, if they are both mowing it together?

"Come," said the divine, "you have set them a very easy sum," and he duly translated it into Armenian.

"It is hardly worth doing," said one of the school masters, "for, of course, the answer is three and a half days."

"Of course, three and a half," said the priest.

"No," I replied.

The engineer began to laugh, and we soon afterwards left the school, neither masters nor pupils being at all certain in their minds as to how they ought to set about doing the sum.

I breathed more freely on arriving in the open air, and blessed my old master, who had once set me this catch question, for my reputation as a profound mathematician is established for ever amidst this generation of school-boys in Yuzgat. After saying good-bye to the senior pedagogue who had accompanied me to the steps of the threshold, I asked him to give the lads a half holiday. He very

kindly acceded to my request, and a cheer from the boys inside, when the good news was imparted to them made me aware that they, if not their masters, were in no way dissatisfied by my visit.—  
*Captain Burnaby.*

REMARKING on the indifference of Hindu pupils as a rule to play and to exercises that conduce to bodily vigour, a gentleman of much experience in educational matters in this Presidency writes as follows:—

"If there is one feature of difference between large schools in England and in this country more striking than another it is the astonishing amount of time devoted by English boys to athletic sports, and the total neglect of such sports in this country. In England the constant complaint of parents is that their children are allowed to cultivate their physical to the neglect of their intellectual powers, that the *mens sana* is insisted on less than the *corpus sanum*. No such complaint has ever reached our ears in this country, nor is it likely that any such ever will. The climate of India militates against any excessive display of bodily energy, while that of England incites to constant exercise. No one can doubt that far too little attention is paid in our schools to the physical needs of our pupils. We seem to forget that "it is necessary to that perfection of which our present state is capable that the mind and body should both be kept in action; that neither health be purchased by voluntary submission to ignorance, nor knowledge cultivated (as it is in this country) at the expense of that health, which must enable it either to give pleasure to its possessor or assistance to others." The Hindu youth who

*Ludere nescit, campestribus abstinet armis,  
Indoctusque Pila, Discive, Trochive quiescit,*

is much to be pitied, and some effort should be made to rescue him, in part at least, from the intellectual demon that now rules him so absolutely."

PROPHETS AND KINGS.—Or sacred and profane history according to the Moslem belief. We learn that Mr. E. Rehatsek intends to publish the abovementioned work if a sufficient number of Subscribers can be obtained to cover the cost of printing it.

It will consist of two parts; the first will extend from the Creation of Genii and Men to the extinction of the Sasanian Dynasty under Yazdijard, and will be a complete translation of Mirkhond's Raudat-al-Cafa, omitting only the portion already published under the title of "History of the Early Kings of Persia, by David Shea."

The second part will contain the "Life of Muhammad" from the second volume of the Raudat-al-Cafa, with an Appendix on the prophet's wives, concubines, children, freedmen and women; translated from the Habib-al-siar of Khondemir, the son of Mirkhond.

MOREHEAD TRANSLATION PRIZE.—*Subject.*—Essay on "Organization in Daily Life," by the Author of "Friends in Council," omitting the Introduction and the conversation at the end.

The translation may be in Tamil or Telugu, and must reach the Principal on or before the 15th March 1878. The value of the Prize

is rupees one hundred. The competition is open to all the Proficients of the College of not more than ten years' standing (except those who have already gained either the Powell or Morehead Translation Prize), as well as to the students who form the present Senior Class.

GOVERNMENT NORMAL SCHOOL, MADRAS.—The Director of Public Instruction notifies the following particulars for the information of candidates who purpose seeking admission into the Madras Normal School:—

(1.) The instruction given to students of that institution is now restricted to such subjects as are adapted to qualify them for the profession of teaching.

(2.) The period of training for those who have passed the F. A. or Matriculation Examination will be two Sessions of about five months each while that for Bachelors of Arts will be six months.

(3.) At the end of the period of training each student will be furnished with a certificate of Proficiency, should he prove himself, upon examination, entitled to it, and his scholarship will then cease.

(4.) Upon his withdrawal from the Normal School each teacher will have to seek employment for himself, the Department of Education not guaranteeing him an appointment. But in the case of passed graduates the Director is prepared, as far as possible, to reserve appointments for them, so that they may be appointed to masterships immediately after they have been declared to have gained a certificate.

(5.) Twenty-eight Government Scholarships will be available for competition, and twenty Free Scholarships will be reserved for duly-educated men either already employed as teachers or about to become teachers in aided schools; and these will be assigned upon application being made for them to the Principal by the Managers of such schools.

(6.) The Government Scholarships will be distributed as follows:—

Rupees 15 a month each to Bachelors of Arts.

Rupees 12½ a month each to F. A. candidates.

Rupees 10 a month each to Matriculated candidates.

2. Graduates will be examined at the Normal School on Monday, 1st April next. Applications for admission should be sent to the Principal and should state age, caste, vernacular, class in which passed, date of passing, and residence.

3. Under-graduates will be examined at the Normal School on Monday, 18th February next. Applications for admission should be sent to the Principal and should state age, caste, vernacular, examination passed, date of passing, and residence.

4. Each application should be accompanied with a copy of a certificate of character from the Heads of the College or School in which the applicant last studied.

5. The subjects which will principally determine the selection of candidates will be reading, pronunciation, writing, spelling, and ready command of English.

6. Successful candidates will be regarded as probationary for two months, during which time, however, they will, if Government scholars, be in receipt of stipends.

**GOVERNMENT SCHOLARSHIPS.**—Five Government Scholarships of Rupees 15 each will be awarded on the results of the First Examination in Arts held in December 1877 under the following regulations:—

The candidate must have been a pupil at the time of the examination and for one year previous in some institution in the five districts noted in the margin.

At the time of the examination the age of the candidate must not have exceeded twenty years.

He must not be in receipt of any other scholarship.

In the event of there being several candidates from the same district the scholarship will be awarded to the candidate who stands highest in the list, but only one scholarship will be awarded to each district.

The candidate must engage to prosecute his studies up to the B.A. degree in some College connected with the Madras Educational Department in which satisfactory provision is made for educating students up to the B.A. standard.

The scholarship will be tenable for two years, but will be liable to be forfeited for idleness or misconduct.

In addition to the above five scholarships one scholarship of Rupees 15 will be awarded to any Mahomedan who has passed the First Arts Examination held in December 1877 without any limitation with regard to district but subject in other respects to the same conditions as the other scholarships.

Eleven scholarships of Rupees 10 each will be awarded on the results of the Matriculation Examination held in December 1877 under the following regulations.

The candidate must have been a pupil at the time of the examination and for one year previous in some institution in the districts noted in the margin.

At the time of the examination the age of the candidate must not have exceeded eighteen years.

In the event of their being several candidates from the same district the scholarship will be awarded to the candidate who stands highest in the list. Only one scholarship will be awarded to each district.

The candidate must engage to prosecute his studies for the F.A. Examination in some College or school connected with the Madras Educational Department in which satisfactory provision is made for educating students up to the F.A. standard.

In the event of his failing to pass the F. A. Examination at the end of two years the scholarship will be forfeited.

In the event of his obtaining a place in the second class at the F.A. Examination the scholarship will not be increased but will be tenable for two years longer, during which the scholarship-holder must prosecute his studies for the B.A. degree in some College connected with the Madras Educational Department in which satisfactory provision is made for educating students up to the B.A. degree.

Kistna.  
Bellary.  
Trichinopoly.  
Malabar.  
South Canara.

Ganjam.  
Karnool.  
Cuddapah.  
Nellore.  
Chingleput.  
North Arcot.  
South Arcot.  
Tinnevely.  
Madura.  
Salem.  
Nellocherries.

In the event of his obtaining a place in the first class of the F.A. Examination the scholarship will be raised from Rupees 10 to Rupees 15, and will be similarly tenable for a further period of two years.

The scholarship will be liable to be forfeited any time for idleness or misconduct.

In addition to the above eleven scholarships two scholarships of Rupees 10 will be awarded to any two Mahomedans and one of Rupees 10 to any Oriya who may have passed the Matriculation Examination held in December 1877 from any institution connected with the Madras Educational Department without any limitation with regard to district but subject in other respects to the same conditions as the other scholarships.

Free scholarships tenable for two years in any Government College or school will be awarded to the first twenty pupils in the first class of the First Arts list and to the first twenty pupils in the first class of the Matriculation list who have failed to obtain stipendiary scholarships without any limitation with regard to district, provided they have passed from some institution connected with the Madras Educational Department and have fulfilled all the other conditions prescribed.

These free scholarships may also be held in any aided College or school with the sanction of the Managers of the institution.

Applications for these stipendiary and free scholarships must be submitted through the Principal or Head Master of the College or school from which the student went up to the examination.

Candidates for the approaching B.L. Degree Examination will be examined in the Old Civil Procedure Code, Act VIII of 1859.

The undermentioned Institutions have been affiliated to the University of Madras:—

UP TO THE F.A. STANDARD.

The S. P. G. Seminary, Sullivan's Gardens, Madras.

Do. High School, Tanjore.

Do. do. Trichinopoly.

The High School, Vijayanagaram.

The C. M. S. English Institution, Palamcottah.

Matriculation and First Arts Examinations will be held at the following places in December 1878:—

|                        |               |
|------------------------|---------------|
| Bangalore.             | Masulipatam.  |
| Bellary.               | Mysore.       |
| Berhampore.            | Negapatam.    |
| Calicut.               | Nellore.      |
| Coimbatore.            | Palamcottah.  |
| Ernakulam (in Cochin). | Rajamahendri. |
| Jaffna.                | Shemoga.      |
| Kumbhakonam.           | Tanjore.      |
| Madras.                | Trichinopoly. |
| Madura.                | Trivandram.   |
| Mangalore.             | Vizagapatam.  |

S. Raju Pillai, now or lately residing in Negapatam, Registered No. 1323, having violated one of the rules for the conduct of the

Matriculation Examination at Negapatam by having a copy of Euclid on the desk before him while answering the Geometry paper, his examination is disannulled by the Syndicate.

V. Natesan, now or lately residing at Negapatam, Registered No. 1323, having been guilty of cheating at the Matriculation Examination recently held at Negapatam, is hereby declared disqualified from passing on the present occasion and from appearing at the Matriculation Examination of December next.

### HORACE'S ODES, BOOK I.

#### ODE XXIV.

By REV. G. U. POPE, D.D.

Warden of the Bishop Cotton Schools and College, Bangalore.

This is an elegy. Quintilius was probably the Quintilius Varus referred to in the *Ars Poetica*, line 433, as one whose judgment in poetry was sought and valued. He may be the Quintilius Varus addressed in the 18th ode.

He is said to have lived at Cremona, was beloved by many, but was especially dear to Vergil and the poet himself. He may be the person addressed in the 5th Epode.

The ode is addressed to Publius Vergilius Maro, who was 5 years older than Horace.

The sentiment in lines 19, 20 is said to have been a favourite one with Vergil.

Sellar (*Poets of the Empire*) remarks upon the high compliment paid to Vergil in the ode: Vergil is the man who most bitterly laments the death of one so good, and this shows congeniality of mind and character.

Shelley in his *Adonais* has borrowed the expression, "so dear a head." The *Adonais* and *Lycidas* both show the influence of this ode; while to the Grecian poet Bion Horace is himself greatly indebted.

#### TO VERGIL.

Griefful we yearn unblam'd for head so dear laid low,  
Nought sounds to grief we set; O mournful muse, do thou  
Teach me thy saddest strain; with liquid voice, the King

To thee hath giv'n with harp to sing.

Doth in very deed sleep eternal hold enchain'd  
Quintilian's self? Him shamefast innocence, unstain'd

Honour, sister of right, and truthfulness severe,

Shall seek, and never find his peer.

He fell bereft of many a true goodhearted man  
None mourn'd him more than, Vergil, thou, devout in vain;  
For other lot to care of gods thou didst commend,

And now would'st fain reclaim thy friend.

What thy' more bland than Orpheus, Thracian bard,  
The strings thou could'st control, by listening forests heard,  
The lifeblood to the phantom pale returns no more

Whom once with wand abhorred sore

17. Main's wing'd son hath driv'n to join his dusty flock;  
His prayers may never more driv'd down of fate to unlock!  
Hard lot! yet easing what no human skill can cure,  
Patience shall teach thee to endure.

#### ODE XXXI.

This ode was composed for the solemn dedication of the library-porticoes and temple of Apollo on the Palatine hill, built by Augustus, in commemoration of the battle of Actium, Oct. 24th A.D.C. 726, B.C. 27.

With it should be read Propertius III. 23 (Puley's Ed. p. 126).  
Merivale III. p. 410. It is referred to in Verg. *Aen.* VIII. 720.  
The main idea is "contentment."

#### TO APOLLO.

1. What asks the bard to-day from Apollo throned?  
What prays he, new wine pouring from goblets now?  
Not crops abundant grown on fertile  
Plains of the isle of the rich Sardinia;
5. Not herds that graze on sunny Calabria's  
Bright fields; not gold or ivory Indian;  
Not lands where Liris, gentle river,  
Silently glides 'mid the purple vineyards.
9. Let others prune their vines with a knife Calene,  
Since thus their fortune wills: let the merchant drain  
From golden beakers costly wine draughts  
Giv'n in exchange for his Syrian perfumes.
13. Gods love him, surely deems he, for yearly oft  
Atlantic seas he tempts in his storm-toss'd bark,  
Unharm'd returning. Me the olive  
Feeds, and the endive, with lightsome mallow.
17. Enjoyment sweet contented of goods I have,  
My body strong, mind of its powers possess'd,  
Old age not feeble, not uncheer'd by harp,  
Son of Latona, I pray thee grant me!

#### MATRICULATION, 1877.

#### ALGEBRA QUESTIONS AND SOLUTIONS.

##### I. Resolve into factors

$$(2a + 2b - ab)^2 - (b^2 - 4a)(a^2 - 4b)$$

Multiplying out we get,

$$\begin{aligned} 4a^2 + 4b^2 + a^2b^2 + 8ab - 4a^2b - 4ab^2 - \{a^2b^2 - 4b^3 + 4a^3 + 16ab\} \\ = 4a^2 + 4b^2 - 8ab + 4(a^3 + b^3 - a^2b - ab^2) \\ = 4(a - b)^2 + 4(a + b)(a - b)^2 = 4(a - b)^2 \{1 + a + b\}. \end{aligned}$$

##### II. Simplify

$$\frac{a+b}{2ab}(g^2 + b^2 - c^2) + \frac{b+c}{2bc}(b^2 + c^2 - a^2) + \frac{c+a}{2ca}(c^2 + a^2 - b^2)$$



Expression

$$= \frac{c(a+b)}{2abc} (a^2 + b^2 - c^2) + \frac{a(b+c)}{2abc} (b^2 - c^2 - a^2) - \frac{b(a-c)}{2abc}$$

$$(c^2 + a^2 - b^2) = \frac{1}{2abc} \{ a^2(ac + bc - ab - ac + ab + bc) + b^2$$

$$(ac + bc + ab + ac - ab - bc) + c^2(ab + ac - bc - ac + bc + ab) \}$$

$$= \frac{1}{2abc} \{ 2a^2bc + 2ab^2c + 2abc^2 \} = \frac{2abc(a+b+c)}{2abc} = a+b+c.$$

Show that if  $a+b+c=0$   $\frac{a^2+b^2+c^2}{a^3+b^3+c^3} \cdot \frac{2}{3} \left( \frac{1}{a} + \frac{1}{b} + \frac{1}{c} \right) = 0$

Since  $a+b+c=0$ , by squaring and transposing we get

$$a^2 + b^2 + c^2 = -2(ab + ac + bc) \text{ also } (a+b)^3 = -c^3;$$

$$\therefore a^3 + 3a^2b + 3ab^2 + b^3 + c^3 = 0$$

$$\therefore a^3 + b^3 + c^3 = -3a^2b - 3ab^2 = 3abc - 3ab(a+b+c) = 3abc$$

$$\frac{a^2 + b^2 + c^2}{a^3 + b^3 + c^3} = -\frac{2}{3} \frac{ab + ac + bc}{abc} = -\frac{2}{3} \left( \frac{1}{a} + \frac{1}{b} + \frac{1}{c} \right)$$

$$\therefore \frac{a^2 + b^2 + c^2}{a^3 + b^3 + c^3} + \frac{2}{3} \left( \frac{1}{a} + \frac{1}{b} + \frac{1}{c} \right) = 0.$$

III. Find the G.C.M. of  $x^4 - 39x - 22$  and  $11x^4 - 39x^3 - 8$

$$\begin{array}{r} x^4 - 39x - 22 \quad 11x^4 - 39x^3 - 8 \\ \underline{-11x^4 + 429x^3 - 242} \quad 11 \\ -39x^3 - 11x - 6 \quad x^4 - 39x^3 - 22 \\ \underline{-x^4 + 11x^2 - 6x} \quad 11 \\ 11x^2 - 33x - 22 \quad x^3 - 3x^2 - 2x \\ \underline{-x^3 + 3x^2 - 9x - 6} \quad 3x^2 - 9x - 6 \\ \underline{-3x^2 + 9x - 6} \quad 0 \end{array}$$

$$\therefore \text{G.C.M.} = x^2 - 3x - 2.$$

Find the square root of  $(x^3 + 4)(x - 1) + \left( \frac{x}{2} + \frac{2}{x} \right)$

Expression when multiplied out

$$= x^4 - x^3 + 4x - 4 + \frac{x^2}{4} + \frac{4}{x^2} + 2 = x^4 - x^3 + 4x + \frac{x^2}{4} + \frac{4}{x^2} - 2$$

$$= x^4 - 2x^2 \left( \frac{x}{2} - \frac{2}{x} \right) + \left( \frac{x}{2} - \frac{2}{x} \right)^2 = \left\{ x^2 - \left( \frac{x}{2} - \frac{2}{x} \right) \right\}^2$$

$$= \left\{ x^2 - \frac{x}{2} + \frac{2}{x} \right\}^2$$

IV. Solve  $\frac{(x+1)^5 + (x-1)^5}{(x+1)^3 + (x-1)^3} = 10$ .

$$\text{Now } (x+1)^5 = x^5 + 5x^4 + 10x^3 + 10x^2 + 5x + 1$$

$$\text{and } (x-1)^5 = x^5 - 5x^4 + 10x^3 - 10x^2 + 5x - 1.$$

$$\therefore (x+1)^5 + (x-1)^5 = 2x^5 + 20x^3 + 10x \dots (1)$$

$$\text{Again } (x+1)^3 = x^3 + 3x^2 + 3x + 1$$

$$\text{and } (x-1)^3 = x^3 - 3x^2 + 3x - 1$$

$$\therefore (x+1)^3 + (x-1)^3 = 2x^3 + 6x \dots (2)$$

$$\therefore \frac{(x+1)^5 + (x-1)^5}{(x+1)^3 + (x-1)^3} = \frac{2x^5 + 20x^3 + 10x}{2x^3 + 6x} = \frac{x^4 + 10x^2 + 5}{x^2 + 3}$$

$$\therefore \frac{x^4 + 10x^2 + 5}{x^2 + 3} = 10; \therefore x^4 + 10x^2 + 5 = 10x^2 + 30$$

$$\therefore x^4 = 25; \therefore x = \sqrt[4]{25} = \sqrt[4]{5^2} = \pm \sqrt{5}.$$

V. A person being asked his age replied—"Ten years ago I was five times as old as my son, but twenty years hence, shall be only twice as old as he." What is his age?

Let  $x$  = father's age; and  $y$  his son's

$$\therefore x - 10 = \text{father's age 10 years ago}$$

$$y - 10 = \text{son's age 10 years ago}$$

$$\text{also } x + 20 = \text{father's age 20 years hence}$$

$$\therefore y + 20 = \text{son's age 20 years hence}$$

$$\text{but by question } x - 10 = 5(y - 10)$$

$$\text{and } x + 20 = 2(y + 20)$$

$$\text{Subtracting } -30 = 3y - 90; \therefore y = 20$$

$$\therefore x = 5(y - 10) + 10 = 50 + 10 = 60$$

Or thus by one unknown:

Let  $x$  = the son's age 10 years ago.

Then  $5x$  = the father's age 10 years ago.

But in 30 years after that date

$x + 30$  will equal the son's age,

and  $5x + 30$  will equal the father's age,

and by the question

$$5x + 30 = 2(x + 30)$$

$$\therefore 3x = 30$$

$$x = 10$$

and therefore the father's present age is  $5x + 10$  or 60.

WILLIAM A. MARCAR.

## CORRESPONDENCE.

### CORPORAL PUNISHMENT.

Sir—With regard to the rule lately published by the Director of Public Instruction, forbidding corporal punishment except for certain cases which are specified, as a teacher of more than twenty-five years' standing, I will give you the details of two cases, culled from many, in which the rod, judiciously used, has had a most beneficial effect;

had it not been resorted to, the two boys to whom I shall refer, would, undoubtedly, have gone to "the bad," instead of becoming, as they subsequently did, two very promising pupils. The first was a Brahmin of about 14 years of age, who had passed the Matriculation examination, and had begun to study the F. A. subjects. Either from pride at having succeeded in the examination, or from other causes, he grew irregular in his attendance, and, if an opportunity occurred, he would often manage to slip out of school in the course of the day, and absent himself for one or two hours. It was brought to my notice, and I spoke to him seriously about the matter, but in a few days he resorted to his old tricks. He was again spoken to, and with like effect. But the next time he was found to be absent, I sent for him to my house, and gave him a very smart caning. The boy cried that he would not do so any more, and he certainly kept his word, becoming afterwards a model of punctuality and regularity in his attendance. Now, had I followed the rule lately laid down by the Director, I should have dismissed the boy, who would thenceforward have become a vagabond on the earth, doing no good either to himself or his family; I however, used what I had good reason to believe would prove an effectual remedy, and the result justified my anticipations. The next case was that of a boy of low caste. He had, while in the lower school held a high position in his class, but all at once he took it into his head to absent himself from school, and no amount of persuasion on the part of his friends could induce him to attend his class. His teacher sent a peon to see what he was doing, but, when the peon approached, he kicked, bit, scratched, and behaved, in short, like a wild beast. I knew the boy had good abilities, and as I took some interest in the family, I recommended a sound flogging, and told the father I was prepared to administer it, if he wished that I should do so. He readily gave his consent. The boy was accordingly brought, and as before a smart caning administered, and the result also in this case was exactly what was sought for. He, from that day, became most regular in his attendance, in fact, in this respect a pattern boy. By the recent rule, however, the boy's name would have been struck off the list, and no effort would have been made for his reclamation. It has, however, never been my plan to attend merely to the boys in school. I have not failed to enquire after the conduct of pupils at home, and to give encouragement, or administer reproof where each was needed. And if a master be worthy of his high calling, his attention will not be confined to the number of lines, words, or rules, a student may learn, but he will use every effort in his power, ay, the rod too, to make his pupils such, that the world may be the better for their life in it. The good boys need little care; it is the capable yet careless; the indolent, the refractory, and the wicked, that want the master's eye; but if the new rules are ever enforced, the master will be left only with the good and mild, and his sphere of usefulness will be reduced to the narrowest limits, and instead of proving a lamp to direct the paths of erring souls, he will dwindle to the veriest pedagogue.

X.

## UNIVERSITY OF MADRAS.

The following Candidates have passed the First Examination in Arts held in December 1877:—

[N.B.—Applications for certificates of having passed this Examination must reach the Registrar not later than the 1st May. In applying for certificates Candidates are requested to give their Register Number and Rank.]

The Matriculation certificates of those who have failed in this Examination will be returned to them on application.]

| Rank.         | Register No. | Name.                           | Where Educated.                   |
|---------------|--------------|---------------------------------|-----------------------------------|
| FIRST CLASS.  |              |                                 |                                   |
| 1             | 35           | Kodandaram Aiyar Tirupulacurum  | Madras Christian College.         |
| 2             | 192          | Panchapakesa Aiyar              | Provincial School, Calicut.       |
| 3             | 505          | Vinayakasundaram Pillai, S.     | Maharajah's College, Trivandrum.  |
| 4             | 196          | Richard, Thomas                 | Provincial School, Calicut.       |
| 5             | 178          | Arunthan Payar, T. V.           | Do. do.                           |
| 6             | 129          | Venkatasubba Aiyar, Erode       | Presidency College.               |
| 7             | 70           | Rajagopalachari, Perunkavur     | Do.                               |
| 8             | 103          | Subramanyam Aiyar, Tittakkudi   | Do.                               |
| 9             | 54           | Mukundaram Gayabedi             | Madras Christian College.         |
| 10            | 303          | Sivananthu Aiyar, K.            | Prov. College, Kumbhakonam.       |
| 11            | 7            | Arayaswami Pillai, Madras Gu-   | Presidency College.               |
|               |              | naharam Pillai                  |                                   |
| 12            | 53           | Nanjunda Aiyar Hebbelalu        | Madras Christian College.         |
|               | 393          | Ramaswami Nishtala              | Provincial College, Rajamahandri. |
| SECOND CLASS. |              |                                 |                                   |
| 1             | 235          | Desikachari, K.                 | Prov. College, Kumbhakonam.       |
| 2             | 189          | Karunakara Perumpulavil Pulio-  | Do. School, Calicut.              |
|               |              | nattu                           |                                   |
| 3             | 226          | Krishna Aiyar Mukkayil Sankara- | High School, Ernakulam.           |
|               |              | marayana                        |                                   |
| 4             | 218          | Pappu, Joseph                   | Do. do.                           |
| 5             | 307          | Sivananthan, K. S.              | Prov. College, Kumbhakonam.       |
| 6             | 291          | Srinivasa Aiyar, G.             | Do. do.                           |
|               | 131          | Virraraghava Chetti, Manjakup-  |                                   |
|               |              | pam                             | Madras Christian College.         |
| 7             | 349          | Ramaschandra Aiyar, Chetti      | Noble High School, Masulipatam.   |
|               | 356          | Venkatasubba Rau, Rentala       | Do. do.                           |
| 10            | 265          | Nilakantan, A.                  | Prov. College, Kumbhakonam.       |
|               | 269          | Rajagopala Aiyangar, T.         | S. P. G. High School, Tanjore.    |
| 12            | 286          | Sankaran V.                     | Prov. College, Kumbhakonam.       |
| 13            | 349          | Tiruvenkata Chari, S.           | Do. do.                           |
| 14            | 346          | Buchanan, Alexander William     | Do. do.                           |
|               |              | John Thomas                     | B. G's. Sch. and Col., Bangalore. |
| 15            | 491          | Sankara Pillai S.               | Maharajah's College, Trivandrum.  |
| 16            | 297          | Subramanya Sastri, P. R.        | Prov. College, Kumbhakonam.       |
|               | 308          | Tirumantachari, M. S.           | Do. do.                           |
| 18            | 366          | Durai-swami, A.                 | St. Joseph's College, Negapatam.  |
|               | 188          | Jacques, Joseph Leonard         | Provincial School, Calicut.       |
| 19            | 280          | Ramaswami Aiyar, A.             | Do. College, Kumbhakonam.         |
|               | 392          | Muhammad Azam                   | Do. do. Rajamahandri.             |

| Rank. | Register No.   | Name.                                      | Where Educated.                   |
|-------|----------------|--------------------------------------------|-----------------------------------|
| 22    | 15             | Chakko, Puttanpurakkal Matth               | Madras Christian College.         |
|       | 310            | Vaidyanadham, T.                           | Prov. College, Kumbhakonam.       |
| 24    | 218            | Subbarayan, Panamarattupatti               | High School, Coimbatore.          |
|       | Anna Aiyar.    | Do.                                        | Ernakulam.                        |
|       | 226            | Rice, Thomas Cornelius                     | Prov. College, Kumbhakonam.       |
|       | 272            | Ramachandra Aiyar, T. A.                   | Do. Rajamandri.                   |
|       | 390            | Malikarjanudu Dugirala                     | Do. do.                           |
|       | 396            | Ramachandra Rau, Alamuri                   | Do. do.                           |
|       | 402            | Sriraghava Rau, Lingam                     | Do. do.                           |
|       | 405            | Ysulu, Bhagavatula                         | Do. do.                           |
|       | 48             | Kuppuswami Chetti, Mylapore                | Presidency College.               |
|       | 82             | Ramanuja Rau, Vavilikolaun                 | Madras Christian College.         |
|       | 103            | Srinivasulu Chetti, Gadela                 | Presidency College.               |
|       | 162            | Singaravala Mudali, Arcot                  | Central College, Bangalore.       |
|       | 263            | Nataraja Pillai, K.                        | Prov. College, Kumbhakonam.       |
|       | 499            | Tirumalai Pillai, M.                       | Maharaja's College, Trivandram.   |
|       | 20             | Desikachari, Punamalli                     | Madras Christian College.         |
|       | 109            | Sundararaja Aiyar, Sattanancheri.          | Presidency College.               |
|       | 215            | Vasudeva Rau, Palladam Sesbagiri Rau       | High School, Coimbatore.          |
|       | 393            | Narasimhaswami, Bachu                      | Prov. College, Rajamandri.        |
| 41    | 459            | Venkatachala Aiyar, Majilrangam            | S. P. G. High Sch., Trichinopoly. |
|       | Ganapati Aiyar | Madras Christian College.                  | Presidency College.               |
| 42    | 24             | Gopalswami Chetti, Granthi                 | Provincial School, Calicut.       |
|       | 123            | Venkatanarasa Aiya, Challa                 |                                   |
|       | 185            | Govinda Menon, Pudia Vittil                |                                   |
| 45    | 156            | Narasimha Aiyangar, Krishnagiri            | Central College, Bangalore.       |
|       | Tuppil.        | Provincial School, Calicut.                | Do. Mangalore.                    |
|       | 201            | Sukambaran, Pattanpurayil                  | High School, Ernakulam.           |
|       | 332            | Padduranga, Mangalore                      | Prov. College, Kumbhakonam.       |
| 48    | 225            | Raman Menon, Vadakke Kurupath              | Maharaja's College, Trivandram.   |
|       | 241            | Gopalachari, T.                            | Prov. College, Kumbhakonam.       |
|       | 478            | Mlakanta Sastri, T. K.                     | High School, Ernakulam.           |
| 51    | 292            | Srinivasan, R. C.                          | Prov. College, Kumbhakonam.       |
| 52    | 229            | Vicrya, Alfred John                        | Prov. College, Kumbhakonam.       |
|       | 217            | Krishnaswami Aiyangar, S.                  | S. P. G. High Sch., Trichinopoly. |
|       | 449            | Rangaswami Aiyar, Subba Rayar, Trivandram. | Madras Christian College.         |
| 55    | 88             | Rangaswami Mudali, Arcot                   | St. Joseph's College, Negapatam.  |
|       | 366            | Duffaiswami Pillai, N. M.                  | Prov. College, Kumbhakonam.       |
| 57    | 313            | Venkatarama Aiyar, M.                      | High School, Coimbatore.          |
| 58    | 217            | Venkata Rau, Sattayamangalam               | Prov. College, Kumbhakonam.       |
|       | Subba Rau      | Do. School, Mangalore.                     | S. P. G. High School, Tanjore.    |
|       | 338            | Gopala Aiyar, N.                           | Provincial School, Calicut.       |
|       | 325            | Krishna Bhatta, Ullal Chevadi              | Prov. College, Kumbhakonam.       |
|       | 430            | Ramaswami Dikshitar, A.                    | Do. School, Mangalore.            |
| 62    | 176            | Achyutan Nayar, Kavinkal                   | S. P. G. High School, Tanjore.    |
|       | 245            | Krishnaswami, P. S.                        | Provincial School, Calicut.       |
| 64    | 86             | Rangachari, Combandur                      | Prov. College, Kumbhakonam.       |
| 65    | 248            | Krishnaswami Aiyar, S.                     | Presidency College.               |
|       | 345            | Gopadarajulu, Agastya                      | S. P. G. High School, Tanjore.    |
|       |                |                                            | N. H. School, Masulipatam,        |
|       |                |                                            | Private Study.                    |
| 67    | 1              | Abhirama Aiyar, Valavanur                  | Madras Christian College.         |
| 68    | 6              | Annaswami Aiyangar, Mannargudi             | Do.                               |

| Rank. | Register No. | Name.                                               | Where Educated.                                             |
|-------|--------------|-----------------------------------------------------|-------------------------------------------------------------|
| 69    | 200          | Seshagiri Prabhu, Mathava Prabh                     | Provincial School, Calicut.                                 |
|       | 330          | Ananta Rau, Maldirala                               | Do. College, Rajamandri.                                    |
| 71    | 335          | Jagannatha Rau, Dignunarti                          | Do. do.                                                     |
| 72    | 243          | Kodandarama Aiyar, S.                               | Do. Kumbhakonam.                                            |
|       | 294          | Subbaraya Aiyar, P.                                 | Do. do.                                                     |
|       | 336          | Kama Rau, Kipaudi                                   | Do. School, Mangalore.                                      |
|       | 386          | Kanaka Raju, Budhiraju                              | Do. College, Rajamandri.                                    |
| 76    | 239          | Gopala Aiyar, R.                                    | Do. Kumbhakonam.                                            |
| 77    | 190          | Kesava Menon, V.                                    | Do. School, Calicut.                                        |
|       | 371          | Sivakolundu Madali, Arunachala                      | St. Joseph's College, Negapatam.                            |
| 79    | 85           | Ramaswami Kottadiyar, Trichinopoly                  | Madras Christian College.                                   |
|       | 208          | Nelliyappa Pillai, Tinnevely Nannita Krishna Pillai | High School, Coimbatore.                                    |
|       | 278          | Ramaswami, S.                                       | Prov. College, Kumbhakonam.                                 |
|       | 279          | Ramaswami Aiyangar, S.                              | S. P. G. High School, Tanjore, and Prov. Col., Kumbhakonam. |
| 83    | 66           | Raghava Aiyar, Peter Braidwood                      | Madras Christian College.                                   |
|       | 150          | Channu Menon Ngalar K.                              | Provincial School, Calicut.                                 |
|       | 251          | Kuppuswami Aiyangar, Ramaswami Aiyangar             | Do. College, Kumbhakonam.                                   |
| 86    | 175          | Purna Aiyar Pantulu, Jilda                          | Private Study.                                              |
|       | 407          | Venkata Rau, Yarramall                              | Provincial College, Rajamandri.                             |
| 88    | 30           | Kallappirana Pillai, Srivikuntana                   | Madras Christian College.                                   |
|       | 242          | Govindaswami Nynar, V.                              | Prov. College, Kumbhakonam.                                 |
| 90    | 59           | Narasinga Rau, Nott                                 | Presidency College.                                         |
| 91    | 67           | Raghavachari, Trivellur                             | Madras Christian College.                                   |
|       | 385          | Kamesvara Rau, Bonala                               | Provincial College, Rajamandri.                             |
| 93    | 264          | Natesa Aiyar, S. M.                                 | Do. Kumbhakonam.                                            |
| 94    | 69           | Raghayulu Nayudu, Nutalapati                        | Madras Christian College.                                   |
|       | 284          | Sambasiva Aiyar, K.                                 | Prov. College, Kumbhakonam.                                 |
|       | 342          | Venkata Rau, Bijur                                  | Prov. Sch., Mangalore and Pt. Sy.                           |
|       | 369          | Narayanaswami Aiyar, S.                             | St. Joseph's College, Negapatam.                            |
| 98    | 192          | Narayana Ayan, Raghunatha Aiyar                     | Provincial School, Calicut.                                 |
|       | 219          | Krishna Aiyar, Aiyappankavu                         | High School, Ernakulam.                                     |
|       | 461          | Aiyappan Pillai, K.                                 | Maharaja's College, Trivandram.                             |
|       | 474          | Krishnaswami Aiyar, V.                              | Do. do.                                                     |
| 102   | 350          | Ramachandra Rau, Drenamraju                         | N. H. S., Masulipatam and P. S.                             |
| 103   | 3            | Adinarayana Aiyar Cambampati                        | Madras Christian College.                                   |
|       | 115          | Tulasigam Mudali, Tiruvagadi                        | Do.                                                         |
|       | 127          | Venkataramayya, William Lough-ton                   | Do.                                                         |
|       | 131          | Venkataswami Pillai, Bandipala-yam                  | Do.                                                         |
| 107   | 111          | Tirumalachari, Mandayam Krishna Aiyar               | Presidency College.                                         |
|       | 273          | Ramachandran, M. S.                                 | Prov. College, Kumbhakonam.                                 |
|       | 484          | Ramanayam Pillai, P.                                | Maharaja's College, Trivandram.                             |
| 110   | 57           | Narasimhachari, Mandayam Annantam Pillai            | Presidency College.                                         |
|       | 311          | Vaidyanatha Sastri R.                               | Prov. College, Kumbhakonam.                                 |
|       | 320          | Narayana Rau, Ankola                                | Do. School, Mangalore.                                      |
|       | 474          | Mathew, Philipe                                     | Maharaja's College, Trivandram.                             |
|       | 592          | Sela Aiyangar, S.                                   | Do. do.                                                     |

| Rank. | Register No. | Name.                                         | Where Educated.                                                   |
|-------|--------------|-----------------------------------------------|-------------------------------------------------------------------|
| 115   | 383          | Hanumanta Rau, Valleri                        | Provincial College, Rajamandri.                                   |
| 116   | 36           | Krishna Aiyar, Madakolattur                   | Madras Christian College.                                         |
|       | 301          | Sandaresa Pillai, M.                          | Prov. Col. Kumbhakonam & P. S.                                    |
| 118   | 9            | Balasundara Mudali, Samudra                   | Presidency College.                                               |
|       | 150          | Krishna Rau, Puti                             | Central College, Bangalore.                                       |
|       | 252          | Kuppuswami Aiyangar, Runga<br>Aiyangar        | S. P. G. H. S., Tanjore and Pro-<br>vincial College, Kumbhakonam. |
|       | 370          | Prabhakarathan, A.                            | St. Joseph's College, Negapatam.                                  |
|       | 409          | Somayajulu, Nishtala                          | Provincial College, Rajamandri.                                   |
|       | 481          | Rangaswami Aiyangar, S. V.                    | S. P. G. High School, Tanjore.                                    |
|       | 436          | Swaminatha Aiyar, V.                          | Do. do.                                                           |
| 125   | 32           | Kabdayya Pillai, Subhapati Pillai             | Presidency College.                                               |
|       | 41           | Krishnaswami Nayadu, Nallur                   | Do.                                                               |
|       | 275          | Ramachandra Sastri, V. P.                     | Prov. College, Kumbhakonam.                                       |
|       | 361          | Satya Rau, Mysore                             | Maharaja's High School, Mysore.                                   |
| 125   | 21           | Ephraim, Joseph                               | Madras Christian College.                                         |
|       | 95           | Singaravelu Pillai, Tranquabar                | Presidency College.                                               |
|       | 128          | Venkata Rau, Vellore                          | Madras Christian College.                                         |
|       | 293          | Srinivasa Rau, Erodi S.                       | Prov. College, Kumbhakonam.                                       |
|       | 435          | Swaminatha Aiyar, R.                          | S. P. G. High School, Tanjore.                                    |
|       | 432          | Rajangan Aiyar, P. N.                         | Maharaja's College, Trivandram.                                   |
| 135   | 38           | Krishna Rau, Chennazhiri                      | C. C. Bangalore, and M. C. Col.                                   |
|       | 232          | Anantaratayana Aiyar, K.                      | Prov. College, Kumbhakonam.                                       |
|       | 244          | Kodandarama Aiyar, T. S.                      | Do. do.                                                           |
| 138   | 360          | Ramaswami Aiyangar, Garur<br>Adoni            | Do. do.<br>Maharaja's High School, Mysore.                        |
|       | 424          | Narayana Aiyar, A.                            | S. P. G. High School, Tanjore.                                    |
|       | 477          | Narayana Pillai, P.                           | Maharaja's College, Trivandram.                                   |
| 141   | 72           | Rajaratna Mudali, Panamalli                   | Madras Christian College.                                         |
|       | 253          | Kuppuswami Aiyar, A.                          | Prov. College, Kumbhakonam.                                       |
| 142   | 496          | Srinivasa Aiyangar, A.                        | Maharaja's College, Trivandram.                                   |
| 144   | 11           | Bashyam Aiyangar, Comandur                    | Presidency College.                                               |
|       | 64           | Park, William Huntly Mason                    | Do.                                                               |
|       | 71           | Rajagopulachari, Trivellore Sun-<br>dara      | Dorseton Protestant College.<br>Madras Christian College.         |
|       | 184          | Gowdan Nayar, Tararatta                       | Pro. Sch., Calicut, and Pt. Study.                                |
|       | 193          | Pattabhirama Chetti, A. K.                    | Do. do.                                                           |
|       | 263          | Narayanaswami Aiyar, V. Sarma<br>Aiyar        | Prov. College, Kumbhakonam.                                       |
| 150   | 81           | Ramanujachari Tirukkivilur                    | Presidency College.                                               |
|       | 337          | Rungappa, Hattikondur                         | Pro. Sch., Mangalore, and Pt. Sy.                                 |
| 152   | 73           | Ramachandra Aiyar, Prabala                    | Do.                                                               |
|       | 151          | Krishnaswami Aiyangar, Bindig-<br>anavali, S. | Madras Christian College.<br>Central College, Bangalore.          |
|       | 277          | Ramanatha Aiyar, G.                           | Pro. Col., Kumbhakonam and Pt.<br>Study.                          |
| 156   | 394          | Palla Aiyar, Ilavajhalam                      | Provincial College, Rajamandri.                                   |
|       | 28           | Jayardhana Rau Pantulu, Man-<br>dapatu        | Madras Christian College.                                         |
|       | 465          | Ganapathi Aiyar, R.                           | Maharaja's College, Trivandram.                                   |
| 158   | 235          | Narasimhaachari, S.                           | Prov. College, Kumbhakonam.                                       |
|       | 323          | Devappa Punja, Attavara                       | Do. School, Mangalore.                                            |
| 160   | 299          | Sundaram Aiyar, N.                            | Do.                                                               |
| 161   | 142          | Arumukha Madali, Tyamagonda-<br>lam Vellore   | Do. College, Kumbhakonam.<br>Central College, Bangalore.          |
|       | 165          | Srinivasa Rau, Madduriri                      | Do. do.                                                           |
|       | 350          | Raghavachari, Chettipanyam                    | Do.                                                               |

| Rank. | Register No. | Name.                                       | Where Educated.                                                   |
|-------|--------------|---------------------------------------------|-------------------------------------------------------------------|
| 164   | 225          | Rama Aiyar Chattapuram Sub-<br>barima       | Maharaja's High School, Mysore.                                   |
|       | 389          | Lakshminipati, Sattayavolu                  | High School, Ernakulam.                                           |
|       | 114          | Subba Rao, Trichinopoly                     | Provincial College, Rajamandri.                                   |
| 167   | 143          | Clarke, Charles James                       | High School, Shingaog.                                            |
| 168   | 153          | Krishna Rau, Salem                          | B. C. S. Schs. and Col. Bangalore.                                |
|       | 17           | Vedavyasa Rau, Conjiveram                   | Central College, Bangalore.                                       |
|       | 25           | Ramaswami Pillai, A. T.                     | Do. do.                                                           |
|       | 328          | Mangesh Rau, Katri                          | Prov. College, Kumbhakonam.                                       |
| 172   | 427          | Panchanatha Aiyar, S.                       | Do. Sch., Mangalore and Pt. Sy.                                   |
| 173   |              | Abraham, Abraham                            | S. P. G. High School, Tanjore.                                    |
|       | 333          | Raghunatha Rau, Mangeshwar                  | Madras Christian College.                                         |
| 175   | 31           | Kalyana Sandaram Pillai, Vridha-<br>chalani | Provincial School, Mangalore.                                     |
|       | 157          | Narasimha Aiyar, Bangalore Pappu            | Madras Christian College.                                         |
| 176   | 352          | Subramanyam, Totu                           | Central College, Bangalore.                                       |
|       | 425          | Panchapakasa Aiyar, T. S. K.                | Noble High School, Masulipatam.<br>S. P. G. High School, Tanjore. |

## MR. FITCH'S LECTURES ON TEACHING.

THE first of a course of ten lectures on the Methods and Art of Teaching was delivered for the College of Preceptors at the College Rooms, Queen-square, Bloomsbury, on Thursday, October 4th, by Mr. J. G. Fitch, H.M. Inspector of Schools, and late Assistant Commissioner under the Endowed Schools Act. The purpose of the lecture was to point out the qualifications which should be possessed by a skilled teacher; and the material resources with which he should be supplied in order to do justice to those qualifications. To an exact and ample knowledge of the subject which has to be taught a good teacher should, he said, add the habits of a student, and a fresh and continued interest in the acquisition of new knowledge. No true sympathy could be established with learners by one who had himself ceased to be a learner. Quickness of eye and ear, considerable physical activity, and habitual cheerfulness were also shown to have much to do with the success and happiness of a schoolmaster's life. The cultivation of a gentle and yet authoritative voice, the acquirement of the art of telling a story well, and especially the need of sympathy with children, their weakness, and their difficulties were next insisted on. Some freshness and originality of mind were also indispensable. Teaching was an experimental science, happily not yet formulated into rules and systems; many discoveries are yet to be made in it. No study of the best methods recommended by others could ever release a good teacher from the responsibility of inventing and discovering methods of his own, and so enlarging the boundaries of educational science. Some rules were then laid down as to the choice of assistant teachers, and as to the means by which the work, especially of youthful teachers, could be utilised and turned to the best account. The lecturer concluded by an examination of the principal conditions which should be fulfilled by a well-built and well-equipped school-room, its light, warmth, perfect

ventilation, the arrangement of its furniture, its decoration, and the apparatus it should contain.

The second lecture was devoted mainly to the consideration of discipline; and of the functions of a teacher as ruler and administrator. Perfect order was essential to effective school-work, and still more to the formation of a child's character for life. It might be secured:—(1) By making every command the subject of careful consideration beforehand. (2) By vigorous adherence to our own laws. (3) By economizing commands, and never using them except they were necessary. (4) By introducing drill and system into little movements and daily acts of school-life. (5) By making due allowance in our plans for the nature of childhood, especially for its physical restlessness and desire for change. (6) By filling the time with work. "Let every scholar at all times in school have something to do, and a motive for doing it." The subject of Attention was next considered, and the conditions under which it could be most effectually attained; e.g., by variety of treatment in the form of lessons; by careful linking of every lesson to something previously known; by frequent recapitulation; above all, by letting it be seen that everything which is taught will be needed again; and has relations to something else, which will hereafter have to be acquired. Bishop Butler's explanation of the way in which habit is strengthened by repeated acts, while passive impressions are weakened by repetition, was shown to have a far-reaching and profound bearing on the discipline of a school, and on the formation of character in it. On rewards and punishments, it was observed that too much reliance ought not to be placed on either, as means of sustaining the teacher's authority or of promoting learning. Dr. Wiese, the late Director of Public Instruction in Prussia, had said with much truth, "Of all the contrasts which the English mode of thinking and acting shows, none has appeared to me so striking and contradictory as the fact that a nation which has so great and sacred a sense of duty makes no use of that idea in the school education of the young. It has rather allowed it to become the custom—and it is an evil custom—to regard the prospect of reward and honour as the chief impulse to industry and exertion." It was of great importance to reduce the number of pecuniary or other inducements to learning, and to depend more on other motives, some of which were then discussed. In regard to punishments, the doctrine of Rousseau, and of Herbert Spencer, as to the mischief of arbitrary punishments, and the importance of establishing in the mind of the child a clear and visible connection between wrong-doing and its consequences, was shown to be of much value, but to be inadequate. Some deeper and more potent motive ought to be found for right action than the consideration of the consequences of disobedience. The lecture concluded with some practical counsels respecting the best distribution of time in a well-organized school.

In the third lecture some general methods were discussed, applicable to the teaching of all subjects. Catechising was shown to serve three distinct purposes:—(1) To find out the extent of a learner's previous knowledge, and to prepare his mind for the reception of a new lesson. (2) To serve itself as a teaching instrument, and to be used constantly in the course of the lesson for bringing to light misconceptions and difficulties, and helping to give shape to the

knowledge as it is received; and (3) To test the results of lessons after they have been learned. In illustration of the first or Socratic method of investigation, a portion of the dialogue with Euthedemus from the *Memorabilia* of Xenophon was read, showing how it was the philosopher's object to purge and purify the understanding of his pupil by showing him that there were latent difficulties in many questions which he had before thought easy. In this way the pupil was conducted to the boundaries of his present knowledge, made conscious of his deficiency, and his mind brought into the right attitude for making further progress. In considering the characteristics of a good and sound mode of questioning, it was shown that all questions should be clear, definite, expressed in as few words as possible, and often varied in their form. Questions which admitted of being answered in single words often left the learner in complete ignorance of the whole statements of which those words formed a part; and should therefore, when used, be followed up by others, by means of which the remainder of the sentence could be elicited. It was important also to cultivate the habit of putting questions in an orderly sequence, so that each question should grow out of the previous answer, and that the whole series of answers should—suppose them to be taken down by an unseen reporter—form a connected and complete account of what had been learned. Those questions were most effective which, with the minimum of words on the teacher's part, evoked the maximum of thought and expression from the scholar. On the subject of Memory, and the right use to make of it in education, a few general exemplifications were first given of the manner in which the laws of mental association operated. It was then shown that the thing to be desired by a teacher was to fix in the mind the relation between any two thoughts or words, that they might be easily reproduced afterwards in the same connection. There were two ways of doing this. It might be effected by the mechanical process of frequent repetition, or it might be effected by exciting strong interest in the subject, and so fixing the attention on the associations which were formed. Everything which helped to evoke the sympathy of the learner, and to impress him with a strong desire to remember, tended *pro tanto* to diminish the drudgery of mere task-work, and the need of constant reiteration of a fact or truth. Learning by heart was at one time almost the only device of teachers. It was now only one of many expedients in use in good schools; and it was important that too much importance should not be assigned to it on the one hand, and that, on the other, the power of verbal memory should not, owing to the reaction against a wrong system, be discredited or undervalued. It was then shown that, in regard to many subjects in which tasks were often set, such as grammar, geography, and history, the true object was to have certain facts understood and remembered, but that the particular words in which the writers of school-books had expressed those facts had no value of their own; and that to require these to be committed to memory was often to discourage the exercise of thought on the subjects. But the faculty for remembering mere words had its uses, and ought to be encouraged, wherever the form, as well as the substance of the thing taught, had a value of its own:—e.g., certain mathematical formulæ from the multiplication table up to the expression of the area of a triangle in terms of its sides, were of frequent use in computing,

required to be remembered in an exact unalterable form, and should therefore be learned by heart. So certain rules of Latin Syntax and some leading dates were often wanted because of their great utility in composition or in reading. Formularies of faith, devotion, and duty, which had a historic value, and were presumably expressed in the weightiest and most authoritative shape, ought also to be committed to memory. And choice passages from great poets, orators, and eloquent writers, sentences or verses specially remarkable for their beauty or their force, were still better for this purpose. The greater the store of such materials with which a pupil could be furnished, the richer he would be for life. Many teachers defended the practice of learning catechisms, and bald uninteresting passages from school-books, on the ground that by this means memory was cultivated. But the true principle to be kept in view was, that it is not expedient to exercise the memory on things which were not worth remembering. And the only things which were worth remembering in the exact words in which they were written were those things which were so expressed that the words themselves had a value—either by reason of their fitness, their terseness, their scientific exactness, or their literary charm—quite apart from the value of the meaning contained in them. The lecture concluded with some counsels relating to the right use of home exercises.

The fourth lecture was mainly devoted to the subject of teaching Reading and Spelling. While fully recognising the anomalies and inconsistencies of the English alphabet, the lecturer did not recommend teachers to waste any time in public efforts to reform it. These efforts were not likely to succeed. The confusion of our weights and measures was a far graver difficulty for teachers than our system of spelling, and it was one which it would be far easier to remove. Yet the conservative instincts of Englishmen were strong, and held them steadily to oppose any plan for decimalizing our weights and measures, or for the introduction of the French metric system. In like manner, it was improbable that the English people would consent to make a sweeping reform in orthography, and so destroy the continuity of the literary life of the nation, in order to save trouble to teachers. With the general consent of literary and learned men, it might be hoped that a few of the more glaring inconsistencies in our spelling would be removed by degrees; but teachers must not expect relief in any other way. And we might be consoled by the reflection that the anomalies and difficulties had been much exaggerated, and were not nearly so formidable to children as grown men were apt to suppose. Many of them had already been surmounted in the nursery or the Kinder-Garten, before children came under regular school instruction. Teachers must be content for the present to deal with the language as it is. The best way to teach spelling was in sentences, as the words occur in reading lessons, not in isolated columns, in which the words had no meaning or association for children. As any characteristic or difficult word emerged in a reading lesson, attention should be specially directed to its form, it should be written on the black-board, a few others of similar formation should be written with it, then spelled and placed in short sentences, and thus the difficulties of our system of spelling would be encountered, one by one, as they occurred. Some hints were then given as to the right use to be made of a dictation lesson, and the best mode of conducting

it. When a sentence was read piece-meal, the fragments into which it was broken should each have a distinct meaning, should be read once only, with a sufficiently long pause for the slowest child to follow; and should be read with the proper tone and inflection to indicate the bearing of its meaning on that of the whole sentence. To read any of the words two or three times over was to confuse the children who had already written them, and to encourage mistakes. Attention was then called to the rarity, even among educated people, of the power to read with perfect accuracy, taste, and expression, and to the extreme value of that accomplishment, not only as a means of adding to the refinement and happiness of a home, but also as an instrument of mental culture and literary perception. Good reading depended (1) On perfectly distinct articulation of every syllable, especially of every consonant. The cases in which there was a special tendency to elide or neglect consonants, and the special exercises by which this fault might be arrested, were discussed. (2) On the true pronunciation of the elementary sounds. In London, the faults of frequently in the use of the vowels, often in closing the lips in uttering them. (3) On the right use of pauses and breaks in the sentence. These were shown to be not only those which were indicated by printed stops; but those which a good reader generally placed between the nominative and the verb, before a relative or a preposition, and generally between the logical elements of a sentence. It was essential that the eye should be trained to glance at least a line in advance of the voice, in order that no word should be uttered until its relation to the sentence was thoroughly seen. (4) On just and rising and falling inflection, in animated and intelligent speech. Finally, teachers were reminded that reading was an imitative art, and that they could not hope to make their scholars really good readers unless they themselves were exceptionally good readers. If they took pains to become so, they would find it an advantage frequently to give pattern-reading at the beginning of a lesson, and at certain intervals to read interesting extracts aloud to the whole of the school. The effect of such models, and of occasional recitations, if prepared by the best scholars in the presence of the class, was very useful.—*The Educational Times.*

### SCHOOL DISCIPLINE: CORPORAL PUNISHMENT.

By AN OUTSIDER.

THE very first consideration of the education of youth involves a series of questions. At what age should a boy's education commence? What is he to be taught, and in what order? Is a public or private education to be preferred? These are questions a parent necessarily asks himself before deciding on the future of his son. And grave questions they are; for it must be borne in mind that even after inquiries more or less carefully made, the father must remain unacquainted with many of the details of the management and discipline of any school he may select. It is, in fact, impossible to explain to him all the art and practice of teaching. These things belong to the initiated; and he must rest satisfied to take the chance of the boy turning out, as the case may be, a scholar or a

It is a very different thing for the teacher. Even if we admit that everything taught in our schools is well worth the learning, the teacher whose heart is in his vocation has still to consider what methods are best calculated to save time—both his own and his pupils'—and, at the same time, give the best direction to the labour of the latter, select the best way of fostering and forwarding existing talent, and advancing to the best of his abilities the "slow" boys, so that his failures may be as few as possible.

Beyond doubt, however, the discipline of the school is at the root of all progress; and here the leading principle to inculcate is the sense of *duty*. From what has of late transpired, we fear too many teachers hold out the promise to their pupils that education is a pleasure—a promise which they cannot be certain they can fulfil; and here many a first false step is made which brings future punishment to the pupil. The path of learning is not an easy one, as he ought to know, and he ought above all things to keep duty before his pupils. If learning becomes a pleasure to some of them—as no doubt it may—leave instinct to its natural course. Keep before a boy the fact that all he is acquiring is intended to make him a useful and honourable member of society, a source of pleasure hereafter to himself, and able and willing to promote the happiness of others.

A great deal has been written and said of late years as to the punishments a teacher ought to inflict upon his pupils for their faults or shortcomings—and, indeed, what power in such matters ought to be entrusted to him. Corporal punishment is to be utterly done away with, and a mild and affectionate tone of remonstrance is to supersede such old-fashioned ideas, and to prove much more effectual. We are not prepared to admit this; in some cases, no doubt, it would have the desired effect, but well assured are we that in many more it would not. But punishment should not be administered as it used to be under the old régime in our public schools; in those old days the schoolmaster was, at once, party, judge, and executioner; there was no court of appeal whatever. All reason and experience lead us to expect the abuses which we know did creep in; nothing is so corrupting as the possession of irresponsible power, and in schools as in kingdoms, the problem of wise legislation can only be satisfactorily solved when such checks and limitations are established as shall take from all in power not only all temptation to do harm, but the means of doing it. Not that we would so fetter the teacher that he had not perfect command over his pupils, nor curb his power so that he could not punish them, but that power should be limited. An irritable man with no tribunal but his own conscience and, possibly, public opinion, cannot, obviously, be safely trusted with any but the most restricted powers of punishment. It was our fate to be the pupil of just such a teacher. Well do we remember him. It is so many years ago now that there can be no harm in mentioning that it was at the High School of Edinburgh. Under the system that then existed, each master had a class-room to himself, and alone there with his pupils—over a hundred boys in the case we are speaking of—his authority was limitless, and accepted as such by all in the school. Add to this, too, that there was a tacit or understood code of honour which forbade us to "tell tales out of school," and some idea may be gathered of the power he wielded. The instrument of correction was the "taws"—a long, thick leathern strap, cut

up a little further than the middle into five "tails"—the ends of which were said to be burned in order to harden them (we are not now quite certain of this), and having an opening at the other end for the master's hand. Not a day passed that many boys had not to "hold out their hands," and down swooped the "taws" half-a-dozen times. We can recall old L—d—y now, his academic gown thrown back, and his naturally red face, redder with passion, as he prepared for action. One morning we all trooped out as usual at twelve o'clock for play—nobody that morning had been punished!—whereupon some wag in the class invented the lines, which we heard many a day after:—

"Cassie! Cassie! what's the cause,  
Bowdie L—d—y's lost his taws?"

These abuses of the past are over, and well it is so; but then they were abuses, and it is not fair nor just to argue that because such things were, corporal punishment is in all cases wrong, and the power to inflict it should never be entrusted to the teacher. We are as utterly opposed as any one can be to the fallacy—once accepted as a truth—that Greek and Latin can be dogged into a boy; that is an utter impossibility; in the case of boys who are either natural dunces, are too idle to learn, the use of the rod is very apt to tend to elevate them in the eyes of many of their schoolfellows, and this leads to a want of respect between teacher and pupil. By all means let every stimulus he had recourse to before inflicting punishment, no matter of what kind; and if corporal punishment be decided on, as experience proves to be absolutely necessary in some cases—where boys seem devoid of all moral sense, and deaf to the voice of reason and kindness—then let the punishment be severe, but administered solemnly and without any admixture of temper; in no case more than in this are prudence and discretion required in a public teacher.

For only the most flagrant offences would we advise the infliction of the rod, and the teacher would do well to state publicly before the class the offence committed, and his reasons for inflicting the punishment. One good effect of this plan is, that it affords an opportunity for enforcing and forewarning other boys regarding breaches of moral conduct which would lead to punishment in their own cases. Thus the teacher should make it appear that the punishment he is about to inflict is—as it ought to be—extorted from him by the demands of justice; that he has estimated fairly the gravity of the offence, and fixed its place correctly in the scale of demerit, whilst, at the same time, he has allowed the culprit the benefit of all circumstances that could be honestly urged in his favour. Precept, in such a case as we have supposed, becomes the most impressive of moral lessons.

Whilst speaking on the subject of corporal punishment, we cannot resist, ere we quit it, referring to the evidence of one of the most distinguished and successful of teachers before the Committee of the House of Commons on Education. Regarding corporal punishment he said:—"In the first operation of any national system of education, I would certainly not go the length of prohibiting by law the infliction of corporal punishment; but there ought, at least, to be very strong recommendations to schoolmasters and teachers to use it as rarely as possible, and only for offences against morality. Nothing,

in my opinion, justifies even the limited use of it, but the present imperfect state of education. The following anecdote will illustrate this, of which I was an eye-witness—

"A boy, in *nicking* (a school term) an object to another, inadvertently soiled the sleeve of the well-kept coat of the teacher, whose back was turned at the time. On perceiving the circumstance, he quietly turned round, and, addressing his numerous class of about a hundred and thirty scholars, stated 'that he was about to do what he had never done before in his class-room;' at the same time taking off his coat and carefully wiping it. Having again put it on, he proceeded from the top of the class, inquiring of each boy individually if he was the guilty person. On coming to the offender, he at once admitted the fact. To the astonishment of all, the Doctor gently patted the boy on the head, and said, 'Stand forward—this a good boy—he has told the truth.'"

As the possession of natural gifts does not merit reward, so the want of them cannot deserve punishment. Talents should not always be the subject of commendation, and dullness made the object of censure. In one case a boy may be dull in spite of his application, and another possessing talents may be idle and without industry. Thus the formal rules which regulate a school should be few and well chosen, and their observance should always be promptly enforced; and care should be taken that the punishment never exceeds the offence, nor that what is merely a fault is magnified into a crime. No system of discipline can be effectual unless there is a reciprocity of feeling between teacher and pupil. The former should ever avoid anything approaching a stimulus of inferior motives, such as fear of punishment—in fact, fear ought to be altogether banished from the school. If the desire of the pupils is, as it ought to be, to endeavour to the utmost of their ability to please the master, his (the master's) will becomes the real rule of the school. A difficult point is also presented in the giving of rewards. It is a mistake to hold out the promise of immediate reward for activity and attention when these are merely temporary, especially as it often leads to unworthy rivalry for personal distinction on account of proficiency, and so to heart-burnings and jealousies. We are not arguing against rewards in themselves, but where the hope of reward, the desire of personal distinction, or the fear of punishment form the incentives to learning, intellectual progress may be rapid, but it will be at the expense of the moral sentiments. Few pupils so taught would deserve the pat on the head, and the—'This is a good boy—he has told the truth.'

We are reminded that there is Scriptural warrant for the use of the rod; we are told "not to spare the child for his much crying." True. But that is intended for parents, who have, we believe, a perfect right to delegate their authority to punish to the schoolmaster. If we are right here, this quite disposes of the statement that the teacher has no authority to punish. What the master must always bear in mind is, that his object is not only to cause the boy pain—that boys care but little for, as you can see when they are at play—but to impress strongly the sense of punishment, and to let him see that his school-fellows understand it in that sense; the very sympathy of numbers, whilst it increases the respect due to the teacher, adds to the punishment of the boy. One plan, which has been found successful in practice, is too little known, or at least too little acted on, that is to

deal with such offences as are of a serious character by trial. Make a certain number of the boys the jury, the master sitting as judge, and fairly try the case. These trials form excellent practical moral lessons, and aid in bringing home to the minds of the boys sound moral rules of judgment. Another effect of this system is, that where the boys have pronounced judgment on moral offences, they are less likely to commit them themselves; and they learn also from the master, as judge, the reasons of moral laws, and are found to obey them the better for understanding and appreciating them.

Discipline has no greater enemy than favouritism. Boys are quick to note any sign of it. It is of the greatest importance that boys should feel that their good efforts are appreciated, and this the master should show that he does, but without exciting vanity or giving too much value to the praise bestowed. But in doing this, let the scholars whom he knows he really likes least (if they deserve it) always have their full share of praise for their efforts, and extend the same also to those boys who may have incurred his censure. The effect of this conduct in such cases where faults have been committed is very great; the boy feels from that moment that he has regained the position his former conduct had lost him, and his doubly careful to retain it.

We are not now discussing the monitorial system, which has its advocates and its denouncers, but a word as to the only method by which it can have a chance of success. There must, first of all, be a feeling of kindness and confidence between the master and the scholar, which can only spring up in the breast of a boy from a strong conviction that his teacher is also his friend, and wishes to be of use to him. But between the master and the monitors, above all, there must be a sentiment of mutual respect and regard. His intercourse with them must be such as to impart the feeling that they are his fellow-workers in a great cause. Whatever their previous habits may have been, he must treat them as gentlemen, and they will speedily become so. As boy nature, however individual characters may differ is very much alike, it is upon the teacher that the responsibility rests of carrying out the principle rightly into practice. Under the system discipline can be well carried out, but it is a mistake to fancy that it makes matters extremely easy for the master. No system requires more personal supervision. The master is the last resort in all appeal cases; and appeals, being made not only against monitors, but more frequently when monitors decline to decide, often involve points of considerable nicety and novelty, which nothing but long habit can enable the teacher himself to determine on the spur of the moment as satisfactorily and speedily as the occasion requires.

In conducting the discipline of his school the master will find that to a class of boys whose feelings of honour have been cultivated, exposure of misconduct becomes the severest part of every sentence, and the fear of it the surest bar against serious offences. Above all, see that every boy in the school has at all times something to do, and a motive for doing it.

The preparation of lessons at home for next day's class comes quite within the province of the master; and here an individual knowledge of his pupils is more than very necessary. The same task which, to a boy of average capacity, would require two hours of



earnest application, would be mastered in one by the abler boys, whilst the slower would find four hours little enough; much discrimination is requisite here, as if the task given is likely to take up too much of the pupil's time, it will either be done badly or not at all; and in due course, next day, punishment of some description will follow. This, care and consideration on the part of the master will render unnecessary. Let the master do his best; let him pitch the average tasks as he may, the prime portion of every large class will still have a considerable capital of unappropriated time, which, if it be not invested in some useful and profitable work, runs the risk of being lost or misemployed, besides the favourable opportunities it presents for getting into mischief. This has been found time well employed by guiding the boys' tastes into other reading than that they are being taught—that is that forms part of the school exercises; and here the master becomes a guide, whom a boy in after years never forgets, as many men now living can testify; for by his selecting hand directions were given for reading, and tastes formed, for which he can never be sufficiently thanked.

In a school where the discipline is strict, yet kindly, masters generally find the head boys quiet and orderly—utterly upsetting the popular notion that the clever boys of the school are the idiest and most unruly. Wherever this happens, it is the fault of the teacher, not of the pupil. The intention of proper discipline is not to produce demure little men, who seem possessed of a knowledge of all things. We want boys to be boy-like—fond of power, privilege, and distinction, and, above all, of occupation. Prudent management is all that is required to make boys as obedient to the rein and curb as a well-trained colt, and yet to leave them all the genius and playfulness natural to their time of life. The master must, to do this, have full power both of reward and punishment; and on his calm judgment and thorough command of temper depends his future of his scholars.—*The Schoolmaster.*

### UNIVERSITY OF MADRAS.

Matriculation Examination—1877.

#### INDIAN HISTORY.

Wednesday, 19th December, 1 to 4 p.m.

Examiners—  
 { Rev. G. U. POPE, D.D.  
 { The very REV. J. COLGAN,  
 { A. L. VENKATARAMANA PUNT, M.A.

#### Part I.

- I. Write notes upon the words, *Brahmācārta* and *Brumārshidāsa*.
- II. What female rulers have been remarkable in Indian History? Give a summary of the history of one of these.
- III. Write a short life of one of the following: Warren Hastings, Sivaji the great, Allā-ud-dīn—Khilji, or the founder of the Bālmuni dynasty.
- IV. What battles were fought, when, between whom, and why—at Tandeshwār, Porto Novo, Sirhind, and Ambur?
- V. Who were Firdāsi, Sankarā Acharya, Khāfi Khān and Bernier.

VI. Write a short account of the sieges and hostile occupations of Delhi you have read of.

#### Part II.

- VII. (a.) When and by whom was the Mogul Dynasty founded.  
 (b.) Give the name of the Sovereign whom its founder conquered.  
 (c.) What prepared the way for the conquest?
- VIII. (a.) Name two of the most remarkable Emperors of this dynasty and give an outline of their history.  
 (b.) What were the peculiarities of their characters?
- IX. (a.) Give a short account of the establishment of the Portuguese dominion in India.  
 (b.) What advantages did the Mahrattas gain over them?  
 (c.) When, and under what circumstances, did Bombay fall to the English.
- X. (a.) State the terms on which Lord Cornwallis concluded peace with Tippu Sultan in 1792.  
 (b.) How long did this peace last?  
 (c.) How was it broken?  
 (d.) Give an account of Tippu's death.  
 (e.) How was his kingdom disposed of?

#### Part III.

- XI. Narrate briefly the circumstances that led to the battle of Plassey.
- XII. Give the leading incidents in the South-Indian career of Clive.
- XIII. Enumerate in chronological order the chief battles and sieges in which Mahrattas and English were engaged during the period 1800 to 1820 A.D.
- XIV. Discuss the claims of Lord William Bentinck, Sir C. Metcalfe and Sir T. Munro to the gratitude of the people of India.
- XV. What do you know concerning the following places, Amboy, Buxar, Bassein, Wardewash and Din?
- XVI. By what steps did the Panjab become British territory.

#### GEOGRAPHY, PHYSICAL AND GENERAL.

Thursday, 20th December, 1 to 4 p.m.

Examiners—  
 { GEORGE DUNCAN, Esq.  
 { C. W. PEARCE, Esq.  
 { D. M. CRICKSHANK, M.A.

[The answers to Parts I, II and III must be written in separate books.]

#### Part I.

##### Physical Geography.

- I. (a.) Explain the statement "the earth is our great time-keeper."  
 (b.) What changes (1) as to time and (2) as to climate would result if the earth should continue to revolve round the sun, as now, but cease to rotate on its axis?
- II. What is wind? Classify the winds.
- III. Can rain fall when the sky is cloudless? Can dew? Explain your answer.

IV. What inference can be drawn from each of the following facts:—

- A mountain is found formed of sea-shells.
- The sea of Aral has for many years past been stationary in breadth and depth.
- On a certain day a cold wind blows over London; on the next the wind changes to a warm moist one.
- Two lakes very near each other are at the same height above the sea, and subject to the same atmospheric conditions; one freezes, the other does not.

### Part II.

#### General Geography.

V. Mention (1) five rivers that water the Panjab and four that fall into the bay of Bengal.

(2) The districts in India which produce cotton and the ports from which it is exported.

(3) The chief towns in the North West Provinces.

VI. Where and what are the following:—

(a) Akyab, the Megna, Aboe, Nasik, the Runn, Galle, the Annamalis, the Ghoorkhas, Yokohama, the Bhor Ghaut?

(b) For what are the following respectively remarkable? Khiva, Bushire, Babelmandeb, Smyrna, the Obi, the Caspian.

VII. What colonies belong to England in Australia and in North America? Mention in each case the principal articles of export and the seat of Government. What possession has England in Polynesia? Why was it found necessary to take possession of it? What other European nations have settlements in Australasia or in Polynesia?

VIII. Which is the most powerful state in North America? What circumstances have combined to make it so? Give some account of its Government.

### Part III.

IX. (1) Mention the three manufactures in which Great Britain is most extensively engaged, the chief seat of each, and the places from which the materials for those manufactures are principally obtained.

(2) What are the principal exports of France? Name and describe the situation of its two largest commercial towns, and say what French town has the most extensive metallic manufactures.

(3) Give the name by which the large lakes at the mouths of certain German rivers are known, and mention three rivers which form such lakes.

X. Name in order, beginning with the most easterly, the states that border on the portion of Brazil that lies north of the Amazon. What are the *llanos*, the *savannas*, and the *pampas*, and in what parts of South America do they occur?

(2) What three African rivers form deltas, and into what sea do they flow?

(3) Describe the position of the following, and give a fact in connection with each:—

Centa; Avignon; Monte Video; Nauplia; Khartoom; Munich

XI. Name the following:—

(1) The two rivers which unite to form the La Plata, the Gironde, and the Humber respectively.

(2) The provinces of the Turkish Empire along the south banks of the Save and the Danube.

(3) The strait that separates Funen from Denmark; the largest island in the Mediterranean; and the mountains that stretch from the Black Sea to the Caspian.

XII. Draw an outline of the Spanish Peninsula. Insert (a) four ranges of mountains that run almost parallel to one another; (b) four rivers that flow into the Atlantic, and one that flows into the Mediterranean; and (c) Salamanca, Lisbon, Seville, Cadiz, Carthagona and Bagcelona.

#### TAMIL GRAMMAR, &c.

Monday 17th December 10 a.m. to 1 p.m.

Examiners:— { V. VENUGOPALACHARIYAR, B.A., B.L.  
C. SUNDARA RAU, B.A.

#### Part I.

##### Tamil Poetry.

I. Analyse and explain the terms கீதிகெறிவிளக்கம் and பாரத வெண்பா; and mention the names of any other works written by the author of கீதிகெறிவிளக்கம்.

II. Enumerate the several characters introduced into Bharata Venba within the portion prescribed for the examination. Explain fully, in Tamil, what part is played by each of those characters, and account, as far as you can, for his taking such part.

III. Paraphrase in Tamil—

A. அருந்தவங்கள் செய்வா ரருநிதியிவார்  
பெருந்தவங்கள் மேற்கொண்டு நற்பார்—திருநதியான்  
மக்கட்பெருவாதே வான்றுயரந்தாத்தீர்ப்பார்.  
மக்கள் பெரும்பேறு மண்.

B. எம்முடையதாய்மா னெனச்சொல்லிவந்தவர்கள்  
தம்மெலும்பு தாக்கினார் தாமில்லை—எம்முடைய  
தாயே படம்போர்க்கின் மற்றொருமட்பெற்றோடு  
தாயே யெனவுரைத்தான்ருள்.

C. புறக்கட்சுவேர்ப்பார் கச்சப்பகைமை  
வெளியிட்டுவெருதல் வேண்டும்—கழிபெரும்  
கண்ணோட்டஞ்செய்யேல் கருவியிட்டாற்றுவன்  
புணவைத்து மூடார் பொதிந்து.

D. கற்படுத்தன்பு முடித்துநான்மெய்ப்புகி  
நற்குணநற்செய்கை பூண்டாட்டு—மக்கட்பே  
றென்பதோர் செல்வமுமுண்டாமினில்லன்றே  
கொண்டாற்குச் செய்கவம்வேறு.

(a.) Who is the speaker in A? To whom are the words addressed? What is the occasion?

(b.) What other reading is there of the last line of A? Distinguish the two readings.

(c.) Parse திருத்திய, வான், தாயே, நடடு, and செய்யேல்.

(d.) How is பேறு formed? Mention words of a similar formation.

(e.) Why is மக்கள் changed into மக்கட் in the 3rd line of A and in the 2nd line of D, when it is not so changed in the 4th line of A? Quote the rules of Grammar supporting your answer.

(f.) In the word தாய்மார், what does மார் signify? And what other signification has that affix? Exemplify.

(g.) What is the force of ஏ in பெறுவாரே, தாயே, இல்லன்றே?

(h.) What figure of speech is used in D? By what name is it known in Tamil? Explain clearly the several parts of the figure used in this stanza.

(i.) What is the history of the படாம் referred to in B?

IV. Explain the allusions contained in the following passages, viz. :-

(a.) குருக்கை மதவேழக் கொம்பொசித்த மாலே.

(b.) ஒற்றைத்திகிரி யொளியோற்குத் தான் பயந்த

கோற்றக்குமரன்

What other periphrasis is used in the text to denote the same object that is meant by ஒற்றைத்திகிரியொளியோன்?

V. Give the meaning of செவ்வி, அசுதி, சிங்கி, கொடியு, படி, குழல், உப்பால், பெற்றி, களிற்று, சந்து, கவயமா, and மறவி.

VI. Give an example or two from the text of தன்வினை used as பிறவினை. What peculiarity do you note in the expression தேகி யெனக்கை யேற்றல்? What does தேகி mean?

VII. Quote couplets from the text-book conveying the following meaning :—(1.) புலிபசித்தாலும் புல்லைத்தின்னாது. (2.) வீறகு மாண்டால் நீ அவியும்.

#### Part II.

VIII. What was the origin of Panchatantra? Name the five parts of the work, and state what they teach. Show how the first two Tantras enter into a Prince's education. What lessons may be gathered from the first book with respect to (1) the qualifications of a minister, (2) the duties of a king to a refugee at his court, (3) the four parts of kingcraft.

IX. (1.) Explain the following terms analysing them into their component elements :—

சுதர்சனன், சுகிரீலாபம், சேவகாருணியன், தழனகன், நிர்மூலம், லகுபதனன், கம்புக்கிரீவன், நாரதம்மியம், காலபலம்.

Give Tamil equivalents to those. What belief does காலபலம் indicate?

Give synonyms for ஆற்றல், வேட்டல், துணி, (verb), இறை, இறை, வைகறை, அண்ணல், செறு, துறை.

X. Re-write the following passage in the indirect form :—  
சிக்கம்—நெடுநாளாய் உன்னைக்கானோம்.

நரி—தேவரிடத்தில் வரத்தக்காரியம் இப்போது நேரிட்டது - ஆகையால் தங்கள் திருவடியை வந்தேன் - இல்லாவிட்டால் வந்ததற்குப் பலன் என்ன.

சி. இல்லது நீ வந்தகாரியமென்ன?

ந. ராஜாக்களுக்கு வருவாரும் பலனில்லாவிட்டாலும், ஒருவேளை சிறு துறையும் பல்லுக்குதவும், மற்றவைகளுக்குக் கேட்பானேன். மேலும் ஒருவேளை அரசர்கள் குணவானே யசட்டை பண்ணித் தள்ளிவிட்டாலும் அவன் சற்குணம்போகுமா. நெருப்பைத் தூலேழுகாப்பிடித்தாலும் அதன் சுவாலை சூழாதுமா. ஆகையால் என்னைச் சிறு நரி என்று அவமதிக்காமல் நான் சொல்வதைக் கேட்டருளும்.

Parse வந்ததற்கு, கேட்பான் and give the force of உம் in the passage.

XI. Re-write with Sandhi the following passage in two compound sentences :—

அப்போது சந்திரியாசி என்னை தடியாலடித்தான். நான் மிகவுழுதுக்கப்பட்டு, உன் சிறகெதிரினுடனே கூடவந்தேன் என்றது. அதைக்கேட்டு மந்திரன் சொன்னதாவது. மித்திரா நீ இதனால் அதைரியப்பட்டு உறையிடம் துறந்தோமென்று வருத்தப்படவேண்டாம், சாதுக்கன் எகதேபோனாலும் மரியாதை பெறுகிறார்கள். சிங்கம் வேறொரு காட்டுக்குப்போனபோதிலும் புல்லை தின்கிறதில்லை, யானையையே தின்னும். உற்சாகமுள்ளவன், சந்தோஷமுள்ளவன், தைரியசாலி இவர்களிடத்திலேயே லட்சுமிவந்தடைகிறான், நீ பணம் இழந்தாலும் எப்போதும் சந்தோஷத்தோடே கூட இருக்கிறாய் ஆகையால் உனக்கிருக்கிற சுகம் பணத்தாசையால் மயங்குகிறவர்களுக்கு இல்லை.

Correct the faults you notice in the following sentence and expressions :—

(1.) முன்னே பகையாழிகளாயிருக்கிறவர்களுடைய விசுவாசத்தில் நம்பிக்கை வைக்கவேண்டாம். நம்பினையோ காக்கம் கோட்டான் கொகையே கொழுத்து னுசம்பண்ணிநார்ப்போலாகும்.

(2.) உக்கரிந்தான், (3) சுடுகண்ணீர், (4) யோக்கியமான மனிதன், (5) வேளைத்தப்பி. (6) சணர் (well) (7) தலைகாணி.

XII. (a.) Write sentences illustrating the use of—

(1.) போல to denote proportion,  
(2.) ஏக்கே to imply negation,  
(3.) ஓ with its different shades of meaning,  
(4.) தும் as a verb-termination,  
(5.) Past tense to denote future time.

(b.) Justify, quoting rules from Grammar, அவன்யார், என்னையல்லாமல், அவன்செய்யும் and அவனுக்கு அது செய்யத்தகும்.

(c.) Derive from—*கஞ்சனா ன் உயர் திணைப்பெயர்*, from *பொல பெயர்* meaning counterfeit, from *பெறு* a தொழித்பெயர் without விடுதி, from *சால்* உ விணைநால்ணையும்பெயர்.

(d.) Analyse *பொலவாத*, *மீண்டு*, *சாப்பாற்று*, and *எச்சம்*.

#### DOVETON PROTESTANT COLLEGE.

The Annual General meeting of the members of the Doveton Protestant College took place on the evening of Saturday January 26th, in the Hall of the College at Vepery, and, was, as usual, poorly attended. The proceedings were opened with prayer by the Rev. A. Walker, after which, the Rev. C. Cooper, the Secretary of the Institution, read the following Report of the Committee for the past year:—

**COLLEGE AND BOYS' SCHOOL.**—The numbers on the Roll when the Institution was closed on the 14th December, were as follows:—

|                    |     |     |
|--------------------|-----|-----|
| Senior B. A. Class | 1   |     |
| Junior B. A. "     | 2   | 20  |
| Senior F. A. "     | 5   |     |
| Junior F. A. "     | 9   |     |
| Upper School       | 54  | 108 |
| Lower "            | 54  |     |
| Total              | 128 |     |

It is with regret that your Committee point out that the downward tendency which was complained of in the previous Report has not experienced a check during the course of the past year, the decrease of numbers being 31 for 1877 as against a decrease of 30 for 1878. It should, however, be borne in mind that the Institution has had to contend with exceptionally unfavourable circumstances during the past year. The severe famine that prevailed throughout its course must have very considerably increased the cost of living. It could hardly have been expected that this circumstance would fail to affect prejudicially the school attendance among a community, the majority of whose members find it difficult enough, even in ordinary times, to defray the cost of their children's education. And doubtless the Doveton is not the only Institution that has suffered in the same way from the same cause. But be that as it may, your Committee would venture to express the hope that this retrograde process may speedily be arrested, and even reversed, and that the year on which we have entered may be the starting point in a career of well-merited usefulness.

Several changes have taken place in the teaching staff of the Institution during the past year, one of them being of very great importance. In the month of May last a letter was received from Mr. Thom, who was then at home on furlough, intimating his intention not to return to Madras, and tendering his resignation of the office of Principal. Your Committee, after having endeavoured without success to induce Mr. Thom to withdraw his resignation, communicated with the Rev. W. Miller and the Rev. E. Sell, who fortunately happened to be in England at the time, soliciting their aid in procuring a com-

petent successor to Mr. Thom, and authorizing them to take the necessary steps for that object. These gentlemen cordially accepted the onerous duty, and prosecuted the matter with such energy, that, in about three months after, a communication was received from Mr. Miller, intimating that Mr. John Cook, M.A., a graduate of the University of Aberdeen, and for some years Assistant to the Professor of Natural Philosophy in that University, had been engaged as Principal. On the 4th of November thereafter Mr. Cook arrived in Madras, and at once entered on the discharge of his duties. Your Committee have received the most satisfactory testimonials as to the character, scholarship and educational experience of the new Principal, and they feel confident that you will unite with them in the expression of their warmest thanks to the Rev. Messrs. Miller and Sell for the very great trouble they have taken in bringing this matter to a speedy and satisfactory termination. From the time that Mr. Thom left on furlough in the beginning of July 1876, until the date of Mr. Cook's arrival in Madras, the charge of the Institution was entrusted to Mr. Bindon, the Head Master, and the thanks of your Committee are due to him for the satisfactory way in which he discharged the duties of Acting Principal. Mr. Shutie, Master of the Fifth Class, resigned on the 1st of December last, and his place has been filled up by Mr. R. Thompson, B.A., of the Madras University, who has had a very considerable amount of experience in teaching. Mr. Wilson, Master of the Third Class, has intimated his intention of resigning at the end of this month, his object being to join the College as a student.

In the early part of the year, the institution was visited by Mr. Fowler, the Government Inspector, who examined all the classes below the Matriculation in the various branches of secular study. From the Report of that Inspection, which will appear as an Appendix to this Report, it will be seen that the Inspector was not by any means satisfied with the progress of the pupils. In forwarding Mr. Fowler's Report, the Director of Public Instruction asked what steps the managers of the institution intended taking in order to improve the quality of the instruction imparted in it. Your Committee replied to the Director by a letter, the gist of which is contained in the following extract:—"The Committee have already made an important arrangement, which they anticipate will do much to secure the object desiderated. When Mr. Thom took leave on furlough in the beginning of July last year, the Committee appointed a native graduate to teach Mathematics in the College department. When the question of doing something to secure a more adequate supervision of the classes in the school department was brought up a few months after, the Committee resolved that the graduate above referred to should be permanently retained on the College staff, so that the Principal might be set free for some time every day for the work of supervising the lower classes. The Committee believe that the want of such supervision, necessitated as it has hitherto been by the fact that the Principal has had to give almost his whole time to the work of teaching in the College, is a great measure to blame for the state of matters adverted to in Mr. Fowler's Report; and they trust that the arrangement they have made will speedily result in an improvement in the quality of the instruction imparted in the institution." Your Committee are aware that a good deal has been

said theoretically about the inexpediency of setting natives to conduct classes of Europeans and Eurasians; and the arrangement they have made, viz., the entertaining of a native graduate on the College staff, has had too short a trial to enable them to pronounce a final decision on its advisability. In these circumstances they have recommended that, after the new Principal shall have had time to acquire a sufficient experience of the working of the classes, he should be invited to express an opinion on this, and on the other existing arrangements for carrying on the work of tuition in the Institution. In the last Report it was stated that eleven candidates went in to the Matriculation, and nine to the F.A. Examinations in December 1876, and that four were to appear at the B.A. Examination in February 1877. The results of these examinations in so far as the Doveton was concerned, were announced by the Acting Principal in his Report read at the Annual Distribution of Prizes in March last. In that Report it is stated that eight passed the Matriculation Examination, two the F.A., while in the B.A. Examination all four failed. In view of those results, your Committee called for a Report from the Acting Principal on the causes of the failure on the part of the Doveton in the University Examinations, and appointed a Sub-Committee to receive and consider it. The chief causes of failure alleged by Mr. Bindon in that Report were—(1) the want of industry on the part of the boys, (2) irregularity of attendance, and (3) the insufficiency of the teaching staff. The Sub-Committee did not quite endorse the first and third of the reasons put forward by the Acting Principal, seeing that with the same teaching staff, and the same class of pupils, the Doveton had done well in the University examinations in previous years. They were disposed to look rather to a more adequate supervision of the lower classes, care on the part of the Professors and Masters to adapt their teaching to the wants of the pupils, and the enforcement of greater regularity of attendance, as the best safeguards against failure in the future. The Principal reports that eleven candidates have gone in, on recommendation, and three on their own responsibility, to the Matriculation Examination, six to the F.A., and that he expects to send up four to the B.A. Examination in February next. Six boys went in to the Peter Cator Examination in Scripture knowledge (Lower Grade), and of those one took a prize, and four gained certificates. All the classes were examined at the close of the session in knowledge, by outsiders, and all the classes below the Matriculation, in secular subjects, by the officers of this Institution. From the Reports of these examinations, which will be given as an Appendix to this Report, it will be seen that some of the lower classes in the school did well both in Scripture and Secular subjects, and that the higher classes did only fairly well in either. Of the College and the Matriculation Classes the only Report that has yet reached us is that from the Rev. Mr. Scott, who examined the Senior F.A. Class in Scripture. His Report is satisfactory.

**THE BOARDING ESTABLISHMENT.**—On Mr. Thom's departure of furlough in July 1876, Mr. Bower took charge of the Boarding Establishment. This arrangement continued until July 1877, when Mr. Bower, for domestic reasons, resigned charge. The number of boarders had by that time been very much reduced, and your Committee thought it most expedient to close the establishment until the arrival of Mr. Thom's successor. Mr. Cook has now taken

charge of it and your Committee hope that this important branch of the Institution will speedily be in as flourishing a condition as it has been in for many years.

**GIRLS' SCHOOL.**—Your Committee have to record a decrease of numbers in the Girls' School as well as in the Boys'. The number on the Roll at the close of the year were 89, as against 123 at the close of the previous year. In last Report it was stated that Miss Keely's health would probably necessitate a change to England in the course of the year, and in the month of June last she took leave on furlough for fifteen months. Prior to her departure your Committee, in consideration of the highly exemplary manner in which Miss Keely had discharged the duties of Head Mistress for a period of ten years, unanimously voted her a gratuity of Rs 500, and they feel quite sure that you will approve their action in this matter. On Miss Keely's recommendation Miss Norton was appointed to take charge of the school during the absence of the Head Mistress. Miss Tuke resigned her post of Pupil Teacher at the end of December last, and her place has been filled up by Miss A. Staggs, for five years a pupil in the school, and strongly recommended by Miss Norton. In the early part of the year the school was examined by Mr. Fowler, whose Report was not a very favourable one. Towards the end of the year the school was again examined, this time by Mr. G. DuFécan, the Acting Government Inspector. His Report was, on the whole, favourable. Both Reports will appear as an Appendix to the present one. Thirteen girls went in to the Teachers' Grade Examination, six for the Second Grade, and seven for the Third. Of these nine have passed, three in the Second Grade, and six in the Third.

The same number of girls presented themselves at the Peter Cator Examination (Lower Grade), and of these two carried off prizes, and eleven gained certificates. These results show that the important subject of Scripture knowledge has been well attended to. At the close of the Session the various classes were examined by ladies and gentlemen unconnected with the school. The Report of these examinations have not yet been all forwarded, but such of them as have reached us are satisfactory. They will be printed as an Appendix to this Report.

**FINANCIAL CONDITION.**—At the end of the year 1877 there was a balance of Rs 2,157 in favour of the institution. During the past year there has been, as compared with the preceding year, on the one hand, a reduction in receipt of fees, owing to the smaller numbers both in the College and in the Girls' School, and there has been, on the other, an increase of expenditure in consequence of the resignation by Mr. Thom of the Principalship of the College, and of Miss Keely, the Head Mistress of the Girls' School proceeding to Europe on sick leave.

In the beginning of June last, your Committee sustained the loss through death of one of their number who had always taken a very active part in the management of the Institution. At their next monthly meeting thereafter your Committee expressed their sense of the loss they had sustained in the Resolution, following:—

**Resolved,**—That the Committee cannot allow the melancholy event of the death of Mr. J. Mills to pass without placing on record their high appreciation of the value of his services as a colleague, and especially as a member of the Building Sub-Committee.

It was then proposed by Mr. Traut, seconded by Mr. D. Grant and carried:—"That the report be adopted and circulated."

The following gentlemen were elected to serve on the Committee in the place of those who retired in accordance with rule. The Hon'ble J. G. Coleman and Messrs. D. Grant, C. Hall, J. Grey and J. T. Greateaux.

The Chairman be thanked, the meeting dispersed.

#### APPOINTMENTS.

Appointments from 15th December 1877 to 15th January 1878.

N. Marugesa Moodelliar to be Deputy Inspector of Schools, Chittoor Circle.

C. Cypusami Sastri to be Deputy Inspector of Schools, Tanjore Circle.

O. Cypusamy Iyer to act as Deputy Inspector of Schools Tanjore Circle.

Mr. Winfred to be Second Master, Zillah School, Chittoor, with the charge of the District Depot.

T. V. Subba Row, B.A. to be Second Master, Zillah School, Cuddalore, with the charge of the District Depot.

P. Vedanta Charri, B.A. to be Head Master, Normal School, Trichinopoly, Enayel Ali, to be Head Master substantive *pro tem* of the Mahomedan School of Kurnool.

C. Patchappa Moodelly to be Second Master Taluk School, Poonamallee. Madika Moodelly to be Second Master, Taluk School Villaparam.

Mr. Ince, B.A. to be Second Master, Zillah School, Cuddalore.

Mr. Scott, B.A. to be Second Master, Zillah School, Kurnool, and continue to act as Head Master of Zillah School, Cuddalore.

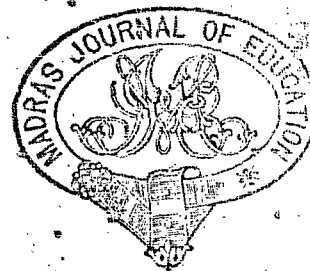
Mr. J. H. Spring Branson, Barrister-at-Law to officiate as Professor of Law at the Presidency College during the absence of Mr. Shephard.

Mr. C. W. Burroughs, B.A., LL.B., Acting Head Master, Provincial School of Mangalore, to Act as Head Master of the Provincial School of Bellary, when relieved by the return to duty of Mr. Moss, B.A.

#### MISCELLANEOUS.

DR. WHEWELL.—With all his donnishness, Dr. Whewell was a wondrous genius and a most amusing companion to those with whom he did not consider it *infra dig*, to contend. He was reputed to be omniscient. Many was the trap laid to test his knowledge. Two Fellows of the College once came to breakfast, both determined to stump him. They had purposely read up "Chinese Music." The subject was soon manoeuvred into the conversation. One of the Fellows dilated upon it at some length. Dr. Whewell listened attentively, and at last smiled sardonically. "All wrong! you're all wrong," he said quietly. The Fellow looked incredulous. "You've been reading the British Encyclopædia," said Dr. Whewell. "We have so," said the Fellow. "Ah, well, that article is all wrong. I did not think so, of course when I wrote it, but I have found out my mistake since I wrote it."—*Whitchell Review*.

Colonel W. H. Reynolds has just concluded a contract with the English Government by which the Post Office Department has adopted the bell telephone as a part of its telegraphic system. In a recent telephonic experiment in connexion with the cable, 21½ miles long, between Dover and Calais, there was not the slightest failure during a period of two hours. Though three other wires were busy at the same time, every word was heard through the telephone, and individual voices were distinguished. This important experiment was conducted by Mr. J. Boardman, of the Sub-Marine Telegraph Company.



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#### THE MONTH.

As we stated in our last issue, the proposed amendments of the Bye-laws with reference to the Examinations in English for the Matriculation and First Arts Tests have been negatived by the Senate of the University. We think this is much to be regretted, for there cannot be the least doubt that Translation from the Vernaculars into English is the best possible test of a Hindu's knowledge of English, and is far superior to the effete paraphrasing system; it should therefore form a part of the English Examination and secure marks under the head of English. It is quite an anomaly to give marks as they are now given in the Vernacular paper for ability to write good English. The proper course would be, as was proposed, to set in the paper on the Vernacular an English piece for translation into that vernacular, while the vernacular passage for translation into English should be given in the English paper to test the power to write English. We here give the proposed amendments, and we feel sure that the time must at length come when we shall find them substantially adopted:—

MATRICULATION EXAMINATION.—There shall be three papers of questions in the English language. The first shall bear exclusively upon the selected text-books. The second shall contain general questions on the grammar, idiom, and structure of the language. The third shall contain a passage or passages for translation from the Vernacular into English. These passages shall be the same for all Vernacular languages, and shall be taken originally from some English author and translated into the Vernaculars, in which form they shall be set for retranslation into English. For candidates

whose Vernacular is English, and who bring up a classical language, the third paper shall consist of English composition.

In the second language there shall be two papers. In the Vernacular languages, the first paper shall contain questions on the text-books, and on the grammar, idiom and structure of the language. The second shall consist of passages for translation from English into the Vernacular, together with original composition. These passages shall be the same for all Vernacular languages, and shall consist partly of extracts from the English text-books, and partly of extracts of less difficulty from other authors. In the classical languages the first paper shall contain questions on the text-books, and on the grammar, idiom and structure of the language, together with one or more passages, which shall be the same for all these languages, for translation from English. The second shall contain passages from the text-books, and easier passages from other authors for translation into English.

**FIRST EXAMINATION IN ARTS.**—There shall be four papers on the English language, two of which shall bear exclusively on the authors brought up for examination.

The third shall contain general questions on the grammar, idiom and structure of the language. The fourth shall contain a passage or passages for translation from the Vernacular into English. These passages shall be the same for all Vernacular languages, and shall be taken originally from some English author and translated into the Vernaculars, in which form they shall be set for retranslation into English. For candidates whose Vernacular is English and who bring up a classical language, the fourth paper shall consist of English composition.

In the second language there shall be two papers. In the Vernacular languages, the first paper shall contain questions on the text-books, and on the grammar, idiom and structure of the language. The second shall consist of passages for translation from English into the Vernacular, together with original composition. These passages shall be the same for all Vernacular languages, and shall consist partly of extracts from the English text-books, and partly of extracts of less difficulty from other authors. In the classical languages the first paper shall contain questions on the text-books, and on the grammar, idiom and structure of the language, together with one or more passages, which shall be the same for all these languages for translation from English. The second shall contain passages from the text-books and easier passages from other authors for translation into English.

We are glad to find from the published results that the Matriculation Examination of last December was much stricter in the language subjects than the Examination of the previous year. The failures in English were 1,314 against 776 in December 1876; and in the optional language 546 against 258, or more than twice as many. The proportion of failures in Mathematics and in general knowledge appears to be nearly the same as in 1876.

*Analysis of failures in the Matriculation Examination, Dec. 1877:—*

|                                 |       |
|---------------------------------|-------|
| Failed in English.....          | 1,314 |
| Do Optional Language.....       | 546   |
| Do Mathematics.....             | 570   |
| Do General Knowledge.....       | 754   |
| Deficient in total marks.....   | 61    |
| Failed in one subject only..... | 578   |
| Do two subjects.....            | 395   |
| Do three.....                   | 277   |
| Do All.....                     | 222   |
| Absent.....                     | 53    |
| Disqualified.....               | 1     |

*In the Late Matriculation Examination*

|                                         |       |
|-----------------------------------------|-------|
| The number of Candidates successful was |       |
| in the First Class.....                 | 96    |
| in the Second Class.....                | 712   |
| Absent.....                             | 53    |
| Disqualified.....                       | 1     |
| Failed.....                             | 1,665 |
| Total number registered.....            | 2,495 |

The following table shows the results for 12 years:—

| Year. | Number Examined at the F.A. Examinations. | Number passed. | Percentage of passed to Examined. |
|-------|-------------------------------------------|----------------|-----------------------------------|
| 1866  | 895                                       | 306            | 34.2                              |
| 1867  | 1,066                                     | 338            | 31.7                              |
| 1868  | 1,320                                     | 324            | 24.5                              |
| 1869  | 1,200                                     | 401            | 33.4                              |
| 1870  | 1,358                                     | 424            | 31.2                              |
| 1871  | 1,119                                     | 492            | 34.7                              |
| 1872  | 1,529                                     | 611            | 39.9                              |
| 1873  | 1,704                                     | 624            | 36.1                              |
| 1874  | 1,947                                     | 756            | 40.2                              |
| 1875  | 2,120                                     | 662            | 31.2                              |
| 1876  | 2,367                                     | 1,250          | 52.3                              |
| 1877  | 2,442                                     | 808            | 33.                               |

We have received a copy of the Desopakari with a request from the Editor that we will bring the Magazine to the notice of the Tamil Community. It is, we are informed, the cheapest illustrated Magazine in the Tamil language. It is well printed on fair paper, and it is indeed a marvel of cheapness, the annual subscription being only 6 annas, and this for a Magazine of 20 pages! The contents of the Magazine are varied and interesting, and on the cover of

each number is an almanac for the month which we note is called not a *Panchangam*, but a *Triyāṅgam*. The Secretary for this useful publication is the Rev. J. Duthie of Nargeroil.

NOTES ON PHYSICS\*.—We have recently had our attention called to this book by two advertisements of it,—the one, a circular letter in bad English, and the other an advertisement in the daily papers. The thing which most struck us about these notices was the assumption that the book would be found quite invaluable to students; "every matriculation student" we are told, "should have a copy." This induced us to procure a copy of the book that we might see whether or not we could safely recommend it to students. The result of the examination will be clear from what follows.

In the preface our author tells us that his "object has been to summarise the portions of Physics" required for the matriculation examination, that "in every instance clear definitions have been given." And further on that "all the information given here is from the best sources and hence quite reliable." Evidently the author has forgotten that one very important question is whether the compiler has a sufficiently broad and accurate knowledge of the subject to enable him even to compile correctly, and, since he has given us no information on this point, we must judge him by his writing. Let us look then how the promises given in his preface are fulfilled. We will begin by taking one of his "clear definitions" from the first page. "Force is a term applied to any cause which is capable of producing motion in matter, or of stopping, or altering, its direction when produced." The clause which we have italicized is to us perfectly meaningless. Here is another of his exquisite definitions: "A plane is a surface without curvature," and this "The point at which ebullition commences is called the boiling point." Perhaps the following is even finer than any "Work may be defined as the expenditure of energy capable of being represented in footpounds." (The italics are the author's.) We should be glad to be told what this means; for we have found it utterly unintelligible—we cannot even guess at the meaning of it.

The descriptions of experiments are little better, and show that in most cases at least the author can never have performed them himself. Take for example the rule for finding the specific gravity of a body lighter than water. Here the student is told to perform the perfectly useless work of weighing the sinker, first in air, and then in water; and the introduction of the data, thus obtained, into the working out of the question makes, what is in reality a very simple piece of work, look very complicated. Or again the description of the action of the syphon is very clumsy and would certainly lead a boy to think that the syphon will not act unless both ends are in water.

Let us look next at a few of his statements of fact. On page 3 we find this "The densest body is Iridium a metal which is more than forty times heavier than water." If the writer can show us a piece of iridium which is 40 times heavier than water we will at once admit

\* By Ben. H. Chester, Head Master, Davidson Street School. First Edition. Madras: 1878. All rights reserved.

the first clause of the statement and congratulate him on his wonderful discovery, but meanwhile we would remark that other authorities on Physics state that several metals are denser than iridium which they say has a density of only 21.15. We wonder what Johnson and Matthey would say to the following which we take from page 26.—"Some solids, as platinum, have never been melted." But perhaps Mr. Chester never heard of the oxyhydrogen blow-pipe.

The section on thermometers is very amusing and contains some 'interesting and instructive' information (?) ancient their manufacture, behaviour and uses: it contains also a "diagram which will show at a glance," so at least we are told, "the relative value of a degree centigrade, or Fahrenheit, or Reaumur" a relation which from the preceding paragraph we learn to be that of the numbers 5, 9, 4°.

We learn further from the chapter on heat that heat waves are propagated in the air: that freezing mixtures produce heat but that the heat is rendered latent, &c. We cannot afford space, and to would answer no good purpose, to touch upon one half of the points with which we might find fault in this book, but we would like to end our extracts by a few of the "Things to be remembered" which are to be found on pages 34 and 35.

"A weight falls 16 feet during the first second of time." "Steel is the strongest metal" but "Iron is the most tenacious metal...an iron wire one-tenth of an inch in diameter will carry 705 lbs. without breaking." Fairbairn's experiments, if we mistake not, gave the strength of iron wire at from 30 to 40 tons per sq. inch and of steel wire at from 50 to 100 tons.

"The pressure of the atmosphere supports a column of mercury 30 inches high, and a column of water 30 feet high;" therefore of course the density of mercury is 12! but what matters an error of 10 per cent.?

"50 vibrations produce a low note, 10,000 vibrations produce a high note." in what length of time? and then to cap all we have this:—"Latent heat of water = 79 pounds. Latent heat of steam = 537 pounds!"

We have devoted a considerable amount of our space to this "First edition" of 'Notes on Physics' not because we expect that the remarks will help the author to make the second edition (which he promises) a useful book, for that we think impossible, but because we consider it to be our duty, as we consider it to be the duty of every one interested in the spread of true learning, to do all we can to discourage the production and sale of such books.

It used to be thought that a person should have mastered a subject before he began to write upon it, but, in Madras, the idea prevalent amongst a large class of people, chiefly undergraduates, seems to be the very reverse of this; for we can in no other way account for the vast amount of utter rubbish which is written year after year and palmed off on the ignorance of matriculation students much to their disadvantage in their examinations.

CORPORAL PUNISHMENT.—The following orders, says an English Journal, were passed at the last meeting of the Boston (U.S.) School Board:—"That section 13 be amended by adding the following:



'Prominence being given to the ability of teachers to govern pupils by moral rather than by physical force; that printed notice of section 139, as amended, and of sections 40 and 185, be sent to all teachers in the service of the city.' Here is an example for those who believe in moral suasion, and the possibility of abolishing corporal punishment in schools. Let the London Board, whose precepts are a law to the provinces, adopt a similar plan. It is declared that a large number of teachers in the service of the Board conduct their schools absolutely without the use of corporal punishment. We have expressed our incredulity, but we have not yet received specific information on the point, as to where these teachers are to be found. They are worthy of reward, and the London Board should do as Boston has done. In the meantime, we commend to the attention of educationists generally the following words from the autobiography of John Stuart Mill, a writer whose opinion is worthy of some consideration:—"I do not believe that boys can be induced to apply themselves with vigour, and what is so much more difficult, perseverance, to dry and irksome studies by the sole force of persuasion and soft words. Much must be done, and much must be learnt by children, for which rigid discipline and known liability to punishment, are indispensable as means. It is no doubt a very laudable effort in modern teaching, to render as much as possible of what the young are required to learn easy and interesting to them. But when this principle is pushed to the length of not requiring them to learn anything but what has been made easy and interesting, one of the chief objects of education is sacrificed. A pupil, from whom nothing is ever demanded which he cannot do, never does all he can. I do not believe that fear as an element in education can be dispensed with."

*The Friend of India* makes a sensible suggestion with regard to the education of natives. Our contemporary says the first radical reform we must make in their education is to banish from their schools every vestige of poetry, for he argues that the study of Tennyson, Milton, and other English poets, gives the natives an erroneous idea of what the English language really is, and ranks us and not them responsible for the rubbish which some "University-educated" native lads write and speak. It is manifest that the "high falutin'" style they acquire at school unfits many native youths for walks of life in which, but for that fault they might creditably employ themselves. Let us educate the bulk of the natives so as to fit them for earning a livelihood in their proper spheres of life; and leave the ability to appreciate "Paradise Lost" to develop itself in the course of time without forcing.

### CORRESPONDENCE.

#### A WICKED PEN.

TO THE EDITOR OF THE MADRAS JOURNAL OF EDUCATION.

SIR,—As you observe in the December Journal in your remarks on the "General English" paper, some of the examiners for the Matriculation Examination seem rather fond of proposing "riddles and

conundrums" for the delectation of Native candidates, I make the University a present of the following, which may, perhaps, be inserted in the Indian History paper at the Matriculation Examination of next December:—

Question.—Which of all the English Generals that have fought in India, has made the greatest slaughter of Madras School Boys?

(Answer. GENERAL ENGLISH.)

VIKADIKAVI-ARAD.  
Parlatha District.

I am, Sir,  
Your obdt. Servant,  
TENNALU RAMA KRISHNA.

[Our subscriber is cautioned that if he sends us any more communications of this nature, he will be prosecuted as the law directs.—Ed. M. J. of E.]

TO THE EDITOR OF THE MADRAS JOURNAL OF EDUCATION.

SIR,—Will any of your readers kindly answer the following questions for me:—

(1.) Find by arithmetic the least Multiple of seven which when divided by nine leaves eight as a remainder.

(2.) 5 lbs of Mercury at 80° Centigrade are mixed with 2 lbs of ice cold water.—Find the temperature of the mixture, the specific heat of Mercury being taken at .033, &c.

CULEX.

### EXAMINATIONS.\*

UNDER the title noted at the foot has lately been published a book of which we purpose giving an analysis as well because of its interest to our professional readers, as on the more general fact that, as the writer says, "Society is now generally interested in Examinations, and it is desirable that their action and the value of their results should be properly understood ... within the last thirty years the agency of Examinations has worked a revolution in the whole province of Education. The system is, from its nature an encroaching power; it influences the prevalent views of life and work among young men; and it affects parents, teachers, the writers of Educational books, and the notions of the public about education. Put broadly, the object of education is no longer to do what is best for the pupil but what will pay best in the Examination room."

Though in the following the writer is speaking particularly of competitive examinations, how exactly does it describe the Procrustean bed to which Indian Education must fit itself:—

"A young man has to present himself for an important examination on a certain day, a list of subjects is given him with the number of marks assigned to each, and the number required to ensure success is pretty well understood. His tutor has a limited time for preparations. The problem before him is therefore very different from that of simply doing what is best for the pupil. The tutor must consider not what studies or what kind of teaching will do him most good, but what studies will yield the highest aggregate in the given time, and he must teach his pupil each subject not with

\* On the action of Examinations considered as a means of selection, by Henry Latham, M.A., Fellow and Tutor of Trinity Hall, Cambridge.

a view to call out his intelligence, but with a view to producing the greatest show on a stated day... The tutor must turn the qualities of the pupil, such as they may be, to the best account he can in point of marks. He cannot try to remedy any mental defects, there is not time enough for any such undertaking to yield profit; he must make the most of such qualities as the pupil has... In short, the tutor has to look to the work that can be turned out, more than to the effect of the training on the producer."

"Those who afford this kind of preparation are often called crammers. Now so far as this term implies any opprobrium it is unjustly applied; a market has been opened for a particular kind of slight fabric, the stouter and costlier stuffs are thereby rendered less saleable, and the mill-owner must meet the popular demand or close his mills. People are hardly aware how thoroughly this educational world is governed by the ordinary economical rules. While employing the motives of gain and advancement most profusely, the public seems to find fault with teachers and pupils for being influenced by those considerations,—they set young men to run a race, and then wonder that they run not to improve their *physique* but simply to win—they make learning a marketable commodity and then complain that it is grown for the market, and that few are now influenced by a pure devotion to science. All teachers would rather educate than cram. It is painful to them to say, you must get off this list of authors and their works by heart. I know it will do you no good, I know that the words Drayton's *Polyolbion* or Evelyn's *Sylva* convey to you no more meaning than if they were the names of Gasteropods, but they will probably be asked for to-morrow."

If, in the above, we substitute for the public "the Indian Governments and Universities" how applicable does it all become! The best men engaged in Indian education would rather educate than cram, but they are powerless against the system. The *slight fabric* is demanded, and he who wishes to produce the old-fashioned *stouter and costlier stuff* must seek work in another mill. The University programme determines the reading of candidates all over India and to quote Mr. Latham, "the Tutor becomes like a professor in a French Lyceum, who is bound to prepare the students to pass in a certain 'Cours' according to a detailed programme, and who is apt to grow disgusted at the mechanical nature of his employment. This feeling has produced very disastrous effects in French education, and we should be careful not to break down the independence of the teacher; with it will go his love for his work and his faith in it." We have taken the liberty of italicising the last two lines as conveying a caution not unneeded among us.

How true again is the following as to the difference between reading from preference and for examination:—

"Young people now will not read Shakespeare; hardly even Byron or Walter Scott, in play-hours at school; and this is especially the case since authors who were our own pleasant companions in winter evenings or summer afternoons—have been included in the lists of subjects for examination; they have thereby become lessons, and got to be regarded by the school boy as having gone over to the enemy altogether."

An effect of the same kind as that produced by *Holiday Tasks*, as they are somewhat Zeugmatically termed, which the Director of

Public Instruction advocated in one of his proceedings regarding the Government Readers that are still under preparation.

The following as to the earlier stimulating, but ultimate deadening of the mind of the student is well worthy of note:—

"A youth feels a stimulus in reading for examinations, something akin to that aroused in a game; he is pitting his wits against those of his competitors the darling spirit of combat so powerful in English lads is called to the help of the instructor;—more than this, he feels also that he is struggling with his examiner—a much more questionable kind of contest and he gets to pride himself on a faculty of divining, as he goes on, what is and is not likely to be set.

"When once a young man thus gets habituated to have his work seasoned by this sense of being on the search for weapons which he is at once to bring to bear in an actual contest, he will find any study that lacks this condiment very insipid: he will be like the whist player of a London club set down to play for penny points in a family rubber. He may try to force himself to his work, he may really wish to acquire the language or the professional study before him, but the comparative remoteness of the return will deaden his interest. He has been used to look for *points*, to regard every effective little bit of information, every new mathematical artifice or short method as something that was to give him an advantage in a passage of arms which he had in view, and when this is gone his work seems for a time to have neither savour nor salt. This feeling affects men in different degrees; sometimes it soon passes away, as when a man goes into active life, and interests of another kind are awakened; in other cases, especially when there is no natural love of intellectual exertion, it gives a permanent distaste for study,—and as far as my observation goes, the later in life the examination system is continued, and the more subjects are embraced in it, the more serious the effect is."

Some redeeming points are, however, allowed.

"Examinations do for young people what the contest of life does for men. A very large proportion of our young men require to be stimulated to study in the same way as men in active life require inducements to keep them to work; Competitive examinations answer to the struggle for advancement in life; Qualifying Examinations to the necessity for competent ability—a necessity which is becoming daily more imperative; and lastly the subjects which are the most repulsive, or which yield the smallest immediate return in the way of a practical acquirement, are the most in need of this adventitious encouragement. It should always be recollected that there are two ways in which the miniature struggle in Examinations is preparatory to the real encounter of life: it is so not only because it leads men to lay up weapons in the way of acquirements, or to strengthen the sinews of the brain by exercise, but also because it calls out the moral qualities needful for success in life—it requires teachableness, concentration, and above all, the power of "enduring hardness," of working when one would rather not work, and setting one's self to master thoroughly what may be distasteful. I believe myself that one great effort in the way of a heavy Examination is a very valuable piece of mental discipline; it calls out the courage and the resources that there are in a man, and more to have made this effort conscientiously, and have done his best, gives a

moral elevation to the character, even if he fail in winning any very marked success. It gives a man confidence and self-respect through life, to have performed something like an achievement--some results of steady self-denial--at the outset of his career."

The following weighty remarks on the examination for the Indian Civil Service Examination may close the present notice--

"With regard to the higher class of appointments such as those for the Indian Civil Service, I am of opinion that the system works injuriously for the higher education, and I cannot but think that the department itself does not obtain such effective public servants as it might command. I need not insist on the main defect of the plan, because it is generally allowed. I mean that the essential requisites for an Indian Civil Servant are that he should have a vigorous will and be self-helpful in emergencies, qualities which an Examination does not pretend to test. I am now concerned mainly with the good of the candidates themselves in an educational point of view. In regard to this, the evils have mainly arisen from the want of foreseeing the effects of so wide an Examination, backed by such vast prizes, on modes of education. The present system was framed mainly with a view to selection and to giving fair play to different kinds of knowledge. It was intended to fashion the Examination so as to give full recognition to all branches of learning without favouring any particular kind of education; but it was not perceived that when a system of Examinations like that for the Indian Civil Service is put forward, this contains implicitly a scheme of education in itself. There must be some special course of study and mode of instruction more adapted than others to insure success; what this most effectual method is can be made out from the published papers and the tables of marks, with the help of a little experience; and after a time this method will be usually adopted by candidates. Few parents can venture to consider anything else than how to secure an appointment; they have to look not for sound education, but for "successful preparation." The consequence is, that what the framers expressly intended to avoid has come about, and a particular sort of education is pressed upon the candidates for these appointments; either they must get it of a special trainer, or in a particular class in a school which is put into the hands of a particular master who has studied the working of the system. If the education thus practically enforced has injurious tendencies, then we are compelling a very important class, in whose sound cultivation we are greatly interested, to adopt a mode of learning which is not satisfactory. \*\*\*\*\* I have frequently had to prepare candidates for the Indian Civil Service Examinations. At first, before the range of the Examination had been taken by the special trainers, the course for it ran along side by side with that which would be followed for educational purposes, and the work was satisfactory enough; but of late a particular kind of preparation has been thought necessary. I have also frequently had as my pupils in college, those who had just failed in getting an appointment--these are not likely to be very different in the mental character from those who had just succeeded--and I have found very generally indeed, that those who had gone through a series of such trials, had the same kind of mental defect. They were usually, for a long time, incapable of giving their minds steadily to any subject requiring close attention."

## HORACE'S ODES, BOOK I.

## ODE XXXVII.

By Rev. G. U. POPE, D.D.

Warden of the Bishop Cotton Schools and College, Bangalore.

THE battle of Actium was fought on the second of September, A.U. 723--B.C. 31; and the death of Cleopatra took place on the thirtieth of August, A.U. 724--B.C. 30. Compare Merivale, Vol. III. pp. 326-349. Merivale in allusion partly to this ode speaks of "the ferocious sarcasms of her exulting conquerors;" but admits that Horace "while sneering at the effeminacy of her habits and the frivolousness of her vanity, does justice to her manly courage, her philosophic fortitude and her kingly pride."

The best commentary on the Ode will be found in studying Horace Epode IX, Verg. Aen. viii. 671-728. Propertius. Lib. v. 6. (Puley p. 249).

All mention of M. Antony is avoided; a Roman's fall is no cause of joy.

The metre is the Alcaic.

TO HIS COMPANIONS.

[ALCAICS.]

1. 'Tis now the glad time, merrily quaff we wine;  
Now should the freed foot jocosely smite the earth;  
The hour has come, my friends, now deck we  
Conches of gods for the Salian banquets!
5. Before 'twas crime old Cæcuban forth to bring  
From cells ancestral, while to the capitol  
The queen's delirious ravings threaten'd  
Ruin, and death to the Roman Empire;
9. While round her throng'd base herds of degraded men  
All loathly fill'd with foulness of vice: while yet  
She weakly nurs'd her fond delusions,  
Drunk with the cup of her fortune's sweetness.
13. But ships in flames her madness abated, scarce  
One sav'd; with wine's wild phantasies fever'd erst,  
She felt true fears now Cæsar follow'd  
Driving from Italy's shores her galleys.
17. As eagle fierce pursuing the timid doves,  
As hunter keen, swift coursing a trembling hare  
On snowed plains Thessalian, Cæsar  
Press'd on her path with oars to capture
21. And chain the fateful prodigy; nobly she  
Sought means of death, nor womanish fear'd the sword  
Nor left her land to seek a refuge  
Over the sea in her swift ships escaping.
25. She saw nor pall'd her palace in ruins laid.  
With countenance unchang'd did she calmly dare  
To handle deadly serpents planning  
Into her veins to imbibe their poison.
29. She courage gain'd by gazing on death's cold face,  
Her haughty soul disdain'd as a queen to be crown'd  
To live to grace Rome's triumphs proud, in  
Galleys Liburnian borne a captive.

## UNIVERSITY OF MADRAS.

First Examination in Arts—1877.

Saturday, 15th December, 10 a.m. to 1 p.m.

## ENGLISH POETRY.

Examiner—H. B. GRIGG, B.A.

I. Describe in simple language the several scenes of the *Morte d'Arthur*, quoting aptly as you proceed.

II. Annotate the following extracts with special reference to the words italicized, explaining the construction in (c)

- (a) "The *sequel* of to-day *unsighs* all  
The goodliest fellowship of famous knights"  
(b) "As thou art *lieg* and dear"  
(c) "Yet I thy *hest* will all perform at full"  
(d) "Where the *moving isles* of *winter shock*"  
(e) "In whom should meet the *offices* of all"

III. Paraphrase the following pieces :—

- I. The old order changeth, yielding place to new,  
And God fulfils himself in many ways,  
Lest one good custom should corrupt the world.  
Comfort thyself : what comfort is in me ?  
I have lived my life, and that which I have done  
May be within himself make pure ! but thou  
If thou shouldst never see my face again  
Pray for my soul. More things are wrought by prayer  
Than this world dreams of. Wherefore let thy voice  
Rise like a fountain for me night and day.  
For what are men better than sheep or goats  
That nourish a blind life within the brain,  
If, knowing God, they lift not hands of prayer  
Both for themselves and those who call them friend ?  
For so the whole round earth is every way  
Bound by gold chains about the feet of God.  
2. "All higher knowledge in her presence falls  
Degraded ; Wisdom in discourse with her  
Loses discountenance, and like Folly shows :  
Authority and Reason on her wait,  
As one intended first, not after made  
Occasionally, and, to consummate all,  
Greatness of mind, and nobleness, their seat  
Build in her loveliest, and create an awe  
About her, as a guard angelic placed."

IV. Describe the meeting between Alp and Francesca on the eve of the attack.

V. Give the allusions in the following passages :—

- (a) "Yet better had he neither known  
A bigot's shrine, or despot's throne"  
(b) "O baffled Persia's despot fled."  
(c) "While Sobieski tamed his pride  
By Budi's wall and Danube's side."  
(d) "What of them is left to tell,  
Where they fought and how they fell ?  
Not a stone on their turf, nor a bone in their graves,  
But they live in the verse that immortally saves"

VI. What is an epic poem ? Name three great writers of this kind of poetry and their epics.

VII. Define and give the meanings of ten of the following words. No extra marks will be given for any excess.

- (1) Pagod, (2) magazine, (3) renegade, (4) church, (5) carnival, (6) masque, (7) cavern, (8) propitiety, (9) epicycle, (10) deceiver, (11) clarion, (12) quintessence, (13) hierarchy, (14) empyrean, (15) samite, (16) encolp.

VIII. (1) "Meanwhile the Son  
On his great expedition now appeared"

Relate briefly the work done during this "great expedition."

(2) "State fully what Raphael has said which leads Adam to reply 'but to know"

That which before us lies in daily life  
Is the prime wisdom ; what is more is vain,  
Or emptiness, or fond impertinence."

Discuss this conclusion with special reference to Milton's own character and opinions.

N.B.—Only one of these questions need be answered.

IX. How does Milton depict or describe the following things in his story of their creation ? Give his epithets.

- (1) the Dolphin, (2) the Stork, (3) the Swan, (4) the Lion, (5) the Sun, (6) the Trees.

X. Explain carefully the meanings of the expressions in italics.

- (1) "Of Heaven and Earth *conspicuous*"  
(2) "Thee also *happier*"  
(3) "Adverse to life" *infernal* days  
(4) "Back the mid sea" *in sculls that oh*

- (5) "This to attain, whether heaven move or earth,  
Fugitive, not?"  
(6) "Among unequals what society  
Can sort?"

- (7) "With cordial spirits warm"  
(8) "The one intense the other still *remits*"

XI. How does Milton speak of himself and his opponents in Book VII ?

XII. Name any important idiosyncracies in Milton's grammar, language, the construction of sentences. Illustrate your answer by quotations from the *Paradise Lost*.

## ENGLISH PROSE.

Saturday, 15th December, 2 to 5 p.m.

Examiner.—CHARLES COOPER, M.A.

I. From the various references to the subject in the "Cicero," draw up the scheme of a liberal education in Cicero's times, when the subject of such education was intended to take part in public affairs.

II. (a) What are the advantages and disadvantages of modern readers of Cicero's Orations as compared with those of his Roman hearers ?

- (b.) "Distinguish between the "Oriental" and the "Attic" styles of Oratory.

III. "The gown wins greater triumphs than the sword."

- (a.) Give the meaning of "gown" in the above passage.

- (b.) Quote a somewhat similar expression of the same sentiment from Macaulay's "Lord Clive," and show how it was exemplified in the career of Clive in India.

IV. State the "Burgoyne Syllogism," and the grounds on which Macaulay defends the British Parliament for not drawing the conclusion of that syllogism when they had voted its premises.

- V. (a.) Give a good example from Macaulay's "Lord Clive" of the author's literary characteristic of at once displaying his erudition and illustrating his subject by an accumulation of "real comparisons," or "instances of the same kind."

- (b.) Give a good example from Cicero's compositions of each of the following: "Sarcasm," "Chiasm," "Pun," "Argument addressed to the feelings."

VI. Explain the following:—

- (a.) Your Epicurean turns Epicure; (b.) The grand climacteric; (c.) The Maccaroni; (d.) The steps of the official ladder; (e.) The little finger of the Company was thicker than the loins of Sarajah Dowlat; (f.) Cicero held retainers from Dyrachium.

VII. Explain the following allusions:

- (a.) The fruitless appeal of Gavius will always be remembered as having supplied Lord Palmerston with one of his most telling illustrations.

- (b.) Sir John Malcolm gives as a letter worthy of Sir Matthew Mite.

- (c.) The story which Ugolino told in the scene of everlasting ice.

- (d.) A nation whose legendary and historical heroes could thrust their hand into the flame and see it consumed without shrinking; or come from captivity on parole, advise their countrymen against peace, and then go back to torture and certain death; or devote themselves by solemn sacrifice.

VIII. Give a brief outline of Cicero's argument in his Essay on "Old Age."

IX. Quote a witty compliment to each of the following:

- (a.) The persuasive power of Cicero's oratory (by Milo).

- (b.) The moral ascendancy (or awe-inspiring) power of Clive over the natives of India (by a native chief).

- (c.) The justice of Cicero's rule as Governor of Cilicia (to Cicero.)

X. State briefly the opinions of Cicero on (1) The Ballot, (2) Suicide, (3) The Origin of Society.

XI. Write a paragraph, of not more than a page and a half in length, on the value of a taste for literary pursuits as a source of happiness, pointing out how your argument is illustrated by the cases of Cicero and Clive, respectively.

GENERAL ENGLISH.

Monday 17th December, 10 a.m. to 1 p.m.

Examiner.—CAPTAIN W. H. HALLETT.

(You are recommended to consider well before committing your answers to paper. *Quality* is required—not quantity.)

1. Put the following into *simple, idiomatic* English, taking care to make the meaning quite clear. Employ one sentence for each verse.

We watched her breathing through the night,  
Her breathing soft and low,  
As if her breast the wave of life  
Kept heaving to and fro.

So silently we seemed to speak,  
So slowly moved about,  
As we had lent her half our powers  
To eke her living out.

Our very hopes belied our fears,  
Our fears our hopes belied—  
We thought her dying when she slept,  
And sleeping when she died.

For when the morn came dim and sad,  
And chill with early showers,  
Her quiet eyelids closed—she had  
Another morn than ours.

Point out and explain every figure of speech in the above.

II. (a.) For when a man hath overgot a wit  
Ful oft him happeneth to misuse it.

(b.) And when they were all on an hope  
Tho behind gonne vplepe  
And clamber vp on other fast

(c.) He was ware, as he cast his eye aside,  
Wher that thei kneled in the highe way  
A compaignie of ladies, twey and twey.

(d.) When that it remembreth me  
Upon my youth, and on my jolitee,  
It tikeleth me about myn herte-rote.

Re-write the above *word by word* according to modern spelling. Where the insertion of a fresh word is necessary according to modern usage, place it in parenthesis.

III. (a.) What is the present state of English as regards inflections? Note and explain any important change in this particular since the days of Anglo-Saxon.

(b.) It was not till nearly three centuries after the conquest that French words were to any considerable extent embodied in the English language. Explain this delay.

IV. (a.) Give the origin and meaning of the following prefixes, illustrating each by two examples—con, de, dis, in, sym, un.

(b.) Distinguish between—hid, lain; taught, tant; born, borne; straight, strait; ought, aught; ere, e'er.

(c.) Explain briefly these expressions—To beg the question; to argue in a circle; a contradiction in terms; splitting hairs; dragging on the imagination; to eek accounts.

goods marked £27 (paper-money) and offers that sum in gold. How much paper-money must he receive in change, 10 per cent. abatement being allowed for cash?

VIII. A and B engage in trade, their capitals being as 3 : 2. At the end of 3 months A takes out a sum equivalent to one-third of B's capital, and at the end of another 3 months B puts in a sum equivalent to what A took out. If A's profits at the end of the year are £110 more than B's find the amount of the profits of each.

IX. What sum of money put out at Compound Interest will in 2 years amount to £1944.81, Interest being at the rate of 10 per cent. per annum, and being paid half-yearly?

X. A person puts £1,197 out at 20 per cent. per annum Interest, and spends at the end of each year £300 more than the annual Interest on £1,197, and thus at the end of a certain time has nothing left. If he had spent £300 less than the annual Interest, how much would he have had at the end of the same time?

XI. What sum must a person invest in the 3 per cent. at 90, in order that by selling out £1,000 stock when they have risen to 103½, and the remainder when they have fallen to 84½, and investing the whole proceeds in the 4 per cent. at par, he may increase his annual income by £9.5s.

#### ALGEBRA AND GEOMETRY.

Thursday, 20th December, 10 a.m. to 1 p.m.

Examiner.—P. RANGANATHA MUDALIYAR, M.A.

I. (a.) Show that  $a^n - (-1)^n b^n$  is divisible by  $a + b$ .

(b.) Thence deduce that  $49^n + 16n - 1$  is divisible by 64.

II. (a.) Find when  $ax^2 + bx + c$  has not the same sign as  $a$ .

(b.) If  $x^2 + 2ax + 4y^2 - 3a^2 = 0$ , determine the limits between which  $x$  must lie for real values of  $y$  and  $y$  for real values of  $x$ .

III. (a.) Solve  $x + y = 3$ ,  $y + z = 5$ ,  $x^2 + y^2 + z^2 = 36$ .

(b.) If the roots of  $\sqrt{ax + b} - \sqrt{bx + a} = \sqrt{a + b}$  be equal, show that  $\frac{a}{b}$  must be one of the three cube roots of  $-1$ .

IV. Find the formula for the number of combinations of  $n$  things taken  $r$  at a time, without assuming the formula for permutations.

V. Find the number of ways in which fourteen coins not distinguishable from one another, may be divided among three persons so that no one may have less than three coins.

VI. (a.) Prove the Binomial Theorem for a negative integral index, assuming its truth for a positive integral index.

(b.) Find the coefficient of  $x^{n-2}$  in the expansion of

$$x^2 - 3x + 4$$

VII. If  $p_n, q_n$  represent respectively the real and imaginary parts in the expansion of  $(1 + \sqrt{-3})^n$ , show that  $p_{n-1} q_n - q_{n-1} p_n = 4^{n-1}$ .

VIII. (a.) Triangles on the same base and between the same parallels are equal to one another.

(b.) D is a fixed point in the same base BC of a triangle ABC. Through G, any point in a fixed straight line parallel to BC, GH is

drawn parallel to AD cutting BC in H. Show that the difference of the triangles AHG, ABH is constant.

IX. (a.) If two straight lines cut one another within a circle, the rectangle contained by the segments of the one is equal to the rectangle contained by the segments of the other.

(b.) ABC, DBE are diameters of a circle at right angles to one another. AFG is any chord cutting DE in F and the circumference in G. Show that the rectangle contained by AF, AG is equal to the square on AD.

X. (a.) Equiangular triangles have the sides about their equal angles proportionals.

(b.) ABC is an isosceles triangle. D is a point in AC such that BD equals the base BC. Show that BC touches the circle circumscribing ABD.

(c.) If BE be a diameter of this circle, and AF, BG perpendicular to BC, AC respectively, show that BE is a third proportional to AF, AB; and that ED is to AB as AG to AF.

XI. (a.) Equal triangles which have one angle of the one equal to one angle of the other have the sides about their equal angles reciprocally proportional.

(b.) Construct a triangle, having given the base, the vertical angle, and the rectangle contained by the sides.

#### TRIGONOMETRY AND EUCLID BOOK XI.

Thursday, 20th December, 2 to 5 p.m.

Examiner.—H. FORTEY, M.A.

I. Define the circular measure of an angle.

If  $\theta$  be the circular measure of an angle of  $A$  degrees, find the relation between  $\theta$  and  $A$ .

What will be the length in inches of an object which subtends an angle of one second at the distance of 10 miles?

II. Prove that  $\cos(A-B) = \cos A \cos B + \sin A \sin B$ , assuming that  $A$  and  $B$  are each less than a right angle.

Show that the formula holds good if for  $A$  and  $B$  we write  $90^\circ +$  and  $90^\circ - B$ .

III. Find  $\tan \frac{A}{2}$  in terms of  $\tan A$ . If  $A$  is less than  $90^\circ$  which of the two values of  $\tan \frac{A}{2}$  is the true one, and what is the meaning of the other?

IV. Find the sine and cosine of  $18^\circ$ .

V. Define a logarithm, and show that  $\log_a a \times \log_a b = 1$ .

VI. In a triangle ABC having given  $AC = \sqrt{2}$ ,  $BC = \sqrt{3}$  and  $\angle BAC = 60^\circ$  find the side AB.

VII. If  $A + B + C = 180^\circ$ , show that the values of  $x$  and  $y$  determined from any two of the following equations will satisfy the third equation

$$(1 + y) \sin A + x \sin (B - C) = 0$$

$$(1 - x) \sin B + y \sin (C - A) = 0$$

$$(x + y) \sin C - \sin (A - B) = 0$$

VIII. A base AB of length  $a$  is measured directly towards the top of a mountain. The angles of elevation of the summit at A and

V. Point out anything incorrect, inelegant, or ambiguous, in the following:—

I do not drink because I am thirsty;  
I will not believe anything I am told.  
He eat the food slowly expressing his thanks.  
A habit of smoking bad tobacco, which he acquired at school, ruined his health.  
He is painfully ignorant, though taught by a Professor who is very clever, being scarcely able to read.  
Among all his other vices he at least possesses the virtue of Temperance.

VI. Name and describe four metres which are respectively suitable in poems of the following descriptions: (a) tragic, (b) humorous, (c) didactic, (d) heroic narrative. Give reasons.

VII. Write a letter (two pages) to your nearest male relative, describing in some detail any out-door game with which you are acquainted, and pointing out its merits 1st as a means of exercise; 2nd as a test of skill.

#### PHYSIOLOGY.

Monday, 17th December, 2 to 5 p.m.

Examiner.—J. M. SUTCHAN, M.D.

Describe and explain the following terms:—Physiology, Artery, Semilunar valve, Molar, Peristaltic, Racemose gland.

II. Describe (a) the structure (b) the function of a "villus," a "Malpighian capsule," a "Sweat gland."

III. Mention the chemical constitution of Saliva, Gastric juice, Bile. State the action of each of these in the process of digestion.

IV. What is meant by "reflex action." Give three instances.

V. What amount of water does a man of average size excrete in 24 hours by (a) the lungs; (b) the kidneys; (c) the skin?

VI. What is the cause of the heat in the human body, and how is the temperature controlled?

VII. Describe the "Atlas" and "Axis" vertebrae with their articulations.

VIII. What cubical space should be provided in a house for a family consisting of two adults and four children, and why?

#### HISTORY.

Wednesday, 19th December, 10 a.m. to 1 p.m.

Examiners:—(J. A. VEREKER BINTON, M.A.

(C. D. MACLEAN, B.A., MHS. Doc.

The answers to Parts I. and II. must be written in separate books.

#### PART I.

I. What does language tell us of the Aryans before their dispersion?

Mention the non-Aryan races of Europe and state approximately the dates when they settled there.

II. Give a concise sketch of Phœnician History.

Describe the changes which marked the beginning of modern Europe.

III. Mention the chief colonizing nations of modern Europe and their chief colonies preserving the chronological order.

IV. Describe the changes introduced into Europe by (a) The treaty of Utrecht in 1713 A.D.

or  
(b) That of Paris in 1815 A.D.

V. State *concisely* what you know of any four under each of the following heads.

(a) B.C. 450, A.D. 451, 800, 1432, 1571, 1806.

(b) Rameau, Dauphin, the Golden Bull, Morgarten, the Sicilian Vespers, Pranks (in its Eastern sense).

#### PART II.

I. Give an account of the battle of Salamis, and of the events leading up to it.

II. What was the political constitution of Athens and Sparta at the time of the expedition to Sicily? What was ostracism?

III. What was the end of Demosthenes the general? What was the Nikean Peace? What was the Thirty Years' Truce? Why was Alcibiades re-called from Sicily?

IV. Make a tabular statement showing the principal events in the life of Alexander the Great, with dates.

V. Sketch the character of Alexander. How has the world benefited by his military operations?

#### ARITHMETIC.

Wednesday, 19th December, 2 to 5 p.m.

Examiner.—E. S. EVANS, M.A.

I. In an examination A obtains 10 per cent. less than the minimum number of marks required for passing, B obtains  $11\frac{1}{2}$  per cent. less than A and C  $4\frac{1}{2}$  per cent. less than the number of marks obtained by A and B together. Does C pass or fail?

II. If the cost of making bread be one rupee per bushel of wheat, what is the price of wheat when the two-manna loaf is twice as large as it is when wheat is Rs. 5 a bushel?

III. If the rupee be worth 1s. 6d., and the mohur 30s., find the least number of pounds which can be paid exactly in rupees or mohurs.

IV. If the rate of wages vary as the price of rice, and if 57 men working for 25 days receive Rs. 465 As. 8 P. 9 when rice is sold at the rate of 136 measures for Rs. 22s., find the price of rice per measure when 70 men working for 19 days receive Rs. 353 As. 4 P. 6.

V. A certain number of men and women subscribe a sum of money, the number of women being four times the number of men. Each man subscribes as many annas as there are men altogether, and each woman as many pice as there are women altogether. The total amount subscribed being Rs. 756 find the number of men and women.

VI. Find the cost of surrounding a rectangular plot of ground 241 feet long by 301 feet broad with a paved walk 4 feet 3 inches wide at 2s. 8d. per square foot.

VII. Paper-money is at a discount of 10 per cent. A man buys

B are  $\alpha$  and  $\beta$  respectively, and the base AB itself slopes upwards at an angle  $\gamma$ . Find the height of the mountain above A.

IX. Define a dodecahedron, and shew how many edges and solid angles it has.

X. Draw a straight line perpendicular to a given plane from a given point without it.

XI. Determine a plane which shall contain a given straight line and make a given angle with a given plane.

XII. If a solid angle be contained by three plane angles, shew that these are together less than four right angles.

### MATRICULATION EXAMINATION, 1877.

#### SOLUTIONS IN ARITHMETIC.

For the questions see the Journal for December 1877, page 548.

|                                                                   | Rs.    | a. | p. |
|-------------------------------------------------------------------|--------|----|----|
| I. The buying price of 1 gall. of spirit of the 1st sort =        | 12     | 8  | 4  |
| Do 264 galls. =                                                   | 3,306  | 2  | 0  |
| Do. of 1 gall. of spirit of the 2nd sort =                        | 9      | 10 | 7  |
| Do 378 galls. =                                                   | 3,652  | 0  | 6  |
| Do of 1 gall. of spirit of the 3rd sort =                         | 12     | 15 | 6  |
| do 420 galls. =                                                   | 5,147  | 5  | 9  |
| $\therefore$ The total cost of (264 + 378 + 420) or 1062 galls. = | 12,405 | 10 | 3  |
| The selling price of 1 gall. of the mixture =                     | 12     | 4  | 0  |
| $\therefore$ do 1,062 =                                           | 12,760 | 9  | 6  |

Rs. 12,760 9 6  
Rs. 12,405 10 3

$\therefore$  the reqd. profit = Rs. 354 15 3 Ans.

|                                                    |  |
|----------------------------------------------------|--|
| II. 1m. = 2w.                                      |  |
| $\therefore$ 2m. + 5w. = 9w.                       |  |
| and 3m. + 6w. = 12w.                               |  |
| 9 women can do 1 work in 8 $\times$ 9 or 72 hours. |  |
| 1 woman do 72 $\times$ 9 hours.                    |  |
| 12 women 2 72 $\times$ 9 $\times$ 2                |  |
| $\frac{72 \times 9 \times 2}{12} = 108$ hours.     |  |

As each day is to consist of 8 working hours,

the No. of days reqd. =  $\frac{108}{8} = 13\frac{1}{2}$  Ans.

III. 0002890 = 000289

$1^2 = 000289$  .017 Ans.

27

|    |     |
|----|-----|
| 1. | 189 |
| 27 | 189 |

254 of 1 acre =  $254 \times \frac{121}{4} \times 10 \times 4$  sq. yds.

= 122 636 sq. yds.

$1^2 = 12293600000$

110876 yds.

Answer.

21 22

21 21

22 193

2208 10360

22167 17664

22167 169600

22167 15160

221746 143100

221746 1330476

221746 112624

IV.  $016 = \frac{16 - 1}{999} = \frac{15}{999} = \frac{1}{66}$

$0351 = \frac{351}{999} = \frac{1}{3}$

$000033 = \frac{33}{99999} = \frac{1}{3030}$

$016 \times \text{Rs. } 2000 = \frac{1}{66} \times \frac{8325}{32} \text{ Rs.} = \frac{185}{128}$  or Rs. 1-7-14

$0351 \times \text{Rs. } 1314 = \frac{351}{999} \times \frac{111}{8} \text{ Rs.} = \frac{351}{72}$  or Rs. 4-11-0

$000033 \times \text{Rs. } 714 = \frac{33}{99999} \times \frac{505}{64} \text{ Rs.} = \frac{1}{384}$  or Rs. 1 p.

$\therefore$  their sum = Rs. 1-7-14 + Rs. 4-11-0 + 1 p.

= Rs. 6-5-2 Answer.

V. In order to gain 5 p. c.

What is sold for Rs. 105 per yard was bought for Rs. 100

Do. 1 do. do.  $\frac{105}{100}$

Do. 25  $\frac{105}{100} \times \frac{25}{100}$

= Rs.  $\frac{25}{100} = \text{Rs. } 2-1-4$

By selling it at Rs. 1-13-0 per. yd. he loses 4 ans 4 ps. or Rs.  $\frac{13}{100}$

The loss on Rs.  $\frac{25}{100} = \text{Rs. } \frac{13}{100}$

Do. 1 =  $\frac{13}{100} \times \frac{12}{25} \text{ Rs.}$

Do. 100 =  $\frac{13}{100} \times \frac{12}{25} \times 100 = 13 \text{ Rs.}$  Answer.



VI. 1 yr. = 52 wks.

∴ 4. yrs. + 17 wks. = 225 wks.

The int. on Rs. 100 for 52 wks. = Rs. 4.

$$\text{Do } 1 \quad " \quad " \quad = \frac{4}{100} = \frac{1}{25}$$

$$\text{Do } " \quad 1 \quad " \quad = \frac{1}{52 \times 25}$$

$$\text{Do. Rs. } 595 \frac{9}{16} \quad 225 = \frac{595 \times 225}{52 \times 25 \times 16} = \text{Rs. } \frac{6597}{64}$$

$$= \text{Rs. } \frac{6597}{64} = \text{Rs. } 103-1-3 \text{ Answer.}$$

VII. £1 R. = 1 sh. 8 $\frac{1}{2}$ d.

∴ 18,240 Rs. = £9784.

The int. on £95 for 1 yr. = £3.

Do. 1 do " = £ $\frac{1}{4}$

$$\text{Do. 9784 do } " = £ \frac{9784}{4} \times \frac{3913}{4}$$

$$= £ \frac{11739}{380} = £30 \frac{339}{380} \text{ Answer.}$$

VIII. Let 1 represent his estate.

After giving away  $\frac{1}{4}$  of his estate to one son,  $1 - \frac{1}{4} = \frac{3}{4}$  or  $\frac{3}{4}$  of it remains.

He gives  $\frac{1}{2} \times \frac{3}{4}$  or  $\frac{3}{8}$  of it to his next son.  
remainder =  $\frac{3}{4} - \frac{3}{8} = \frac{3}{8}$  or  $\frac{3}{8}$  of it = the widow's share.

By the question  $\frac{1}{2} - \frac{1}{4} = \frac{1}{4}$  or  $\frac{1}{4}$  of the estate = Rs. 1,220

∴ the whole estate = Rs.  $\frac{1220 \times 11}{1} = \text{Rs. } 17,280$ .

∴ the widow's share =  $\frac{3}{8} \times 17280 \text{ Rs.} = \text{Rs. } 4,200 \text{ Ans.}$

IX. The cost of 1 bag of rice = Rs. 10 $\frac{1}{2}$

210 do = Rs.  $\frac{43}{4} \times 210 = \text{Rs. } 2287\frac{1}{2}$

The weight of rice that 1 bag contains = 164 lbs.

210 do =  $164 \times 210 = 34,440 \text{ lbs.}$

The cost of transporting

1 ton or 2240 lbs. for 1 mile =  $\frac{13}{2 \times 12 \times 16} \text{ Rs.}$

$$1 \text{ lb.} = \frac{13}{2 \times 12 \times 16 \times 2240} \text{ Rs.}$$

$$34440 \text{ lbs. } 320 = \frac{13 \times 34440 \times 320}{2 \times 12 \times 16 \times 2240} \text{ Rs.}$$

$$= \text{Rs. } 166 \frac{2}{3} = \text{Rs. } 166 \text{ Ans.}$$

∴ The total cost of 34,440 lbs. of rice = Rs. 2,287-8-0 + Rs. 166-9-0 = Rs. 2,454-1-0.

After 7 $\frac{1}{2}$  lbs. of rice are stolen from each bag there remains  $210 \times (164 - 7\frac{1}{2})$  lbs. of rice =  $\frac{210 \times 625}{4} \text{ lbs.} = \frac{65,625}{2} \text{ lbs.}$

∴ In order to clear Rs. 95-15-0 by the transaction, he must sell  $\frac{65,625}{2}$  lbs. of rice for Rs. 2,454-1-0 + Rs. 95-15-0 = Rs. 2,550.

Now  $\frac{25}{8} \text{ lbs.} = 1 \text{ m.}$

$$1 = \frac{8}{25}$$

$$\frac{65,625}{2} = \frac{8}{25} \times \frac{65,625}{2} \text{ measures,} = 10,500 \text{ measures.}$$

∴ Rs. 2,550 is the cost of 10,500 measures of rice

$$\text{and } 1 \text{ " } = \frac{10,500}{2,550} \text{ " } = 4 \frac{2}{17} \text{ measures Ans.}$$

C. DEVARAJAM PILLAY.

#### \* DR. OPPERT ON THE SCIENCE OF LANGUAGE.

The first material change in a young household is the birth of a child, and those who were previously living together as man and wife, become respectively father and mother. It is the child which confers on its parents the dignity of fatherhood and motherhood, and it appears, therefore, only proper, that it gives to its father and mother names denoting this their new condition. The words for father and mother are thus, in the great majority of languages, identical with the first sounds a child pronounces, and these sounds, if once permanently applied to signify father and mother, form afterwards the roots for words which convey the chief qualities supposed to be found in parents, when regarded from a filial point of view. It is thus not surprising that, e.g., the Sanskrit roots *pa* and *ma* convey the meaning of feeding or protecting, and of granting, or measuring, as they appropriately express the qualities expected to be found in a father (*pitr*) or mother (*matr*). Such an origin of the words of father and mother has been often and long ago suggested, but many scholars, and among them scholars of the first rank, as Professor Max Müller, are still averse to this explanation, and prefer to derive the noun from the verb, that is *pitr* from *pa*, *matr* from *ma* (the tri being the well-known Sanskrit Kṛita affix). However this may be, the origin of the words for father and mother is for us in this inquiry a matter of less importance, whether they are derived from childish babbling, their sources then lying in natural causes alone, or whether they are a product of argumentative reasoning, the former explanation appearing much more plausible than the latter for the formation of parental words does not require any special mental exertions.

There are, on the other hand, words of relationship whose construction requires a certain amount of reflection in consequence of

their more complicated nature, and which, showing in their external formation some thoughtful consideration, provide us with a cue for explaining idiomatic peculiarities; and which assist us thus in our scheme of classification.

Comparing, as far as we are able to do, the words denoting kinship with each other, as they occur in the several languages, one most peculiar feature will immediately become apparent. The manner of naming is two-fold. "The one shows a tendency to observe a certain most prominent quality in a person or in an object, and to name its possessor accordingly; the other deals with the individual specimen as a concrete body, distinguishable from a similar one by a constitutional discrepancy, such as sex, &c., which discriminating mark is separately added. This difference, in order to be recognized as a final existing one, must show itself throughout the mind, at all events in the nearest and more important degrees of affinity. The character possessed by parents must, to some extent, reappear in their children, the same peculiarity which guides the mind of parents, when naming their children, must manifest itself in their children, when they address each other as brothers and sisters.

The languages in which parents call their children sons or daughters, and in which those sons and daughters call each other brothers and sisters, are different in thought—that is, in expression and construction—from those where the former go by the name of male children and female children, and the latter by that of elder or younger brother and sister. The difference between those two modes of expression is that the one manifests a power of abstraction, which is wanting in the other, as it adheres to the concrete substance. The inclination towards abstraction and concretion would not be so significant and deserving of notice if it did not show itself in other forms again and again in various expressions of a language corroborating the tendency observed in the denomination of relations.

The custom which prevails among many tribes, of using the terms of kinship, when addressing relatives, instead of proper nouns, enhances their importance. Strangers may have recourse to surnames or bye-names while conversing with each other, but relations do not use them, in familiar conversation, and prefer, in their stead, words expressing the exact degree of affinity existing between the parties. This mode of address is found still among many nations, *e.g.*, among the inhabitants of South India as well as among the Indians of North America. "American Indians" always speak to each other when related, by the term of relationship, and never by the personal name of the individual addressed. In familiar intercourse, and in formal salutation, they invariably address each other by the exact relationship of consanguinity or affinity, in which they stand related. . . . It is not only the custom to salute by kiss, but an omission to recognize in this manner a relative would, amongst most of these nations, be a discourtesy amounting to an affront. . . . It would be a violation of good manners for an Indian to speak to another Indian by his name." Actual relationship is, on the other hand, not always required to induce people to address others by such terms of kinship. Respect towards age or rank inspires juniors or inferiors to call their seniors or superiors *father* or *mother*, while kindness or condescension

\* See Morgan, Systems of Consanguinity and Affinity, p. 11. 2.

makes the latter address the former by the terms of son or daughter. In fact, by using such words of relationship a certain familiarity, an acknowledgment of consanguinity is produced, which is flattering to the humble, and most degrading to the mighty. If the Czar of Russia calls his subjects children, and they call him father, each party understands what is meant by these terms of endearment. Equals prefer to address each other as brother and sister. This is a common mode of calling, especially among nations, who retain a certain amount of caste or clan feeling. If it prevails among people who speak concrete language, the terms of elder and younger brother or sister enable the speakers to combine the expressions of deference or condescension even while admitting or claiming equality. This is expressed when you hear in this country people call each other *amun* or *tambi*, &c. A remnant of this custom exists in the form how reigning princes address each other, when they call their equals in rank and power brothers or sisters, and their inferiors by a more distant term of kindred, as consins.

From this concrete mode of address by means of the words of relationship to the practice of using an abstract and now more common form of address, represented by the pronoun, is a wide step, but these terms of consanguinity and the pronouns retain a certain affinity and connection between each other which manifests itself in the manner how both ignore or express gender.

According to the propensity towards abstraction and concretion, just now observed, we propose to divide all languages into two classes, into abstract and concrete languages. Both divisions are in turn re-arranged into groups. Into these groups are then classed the various languages, conformable to the differences they exhibit in their external appearance, whether it be aggregative, as the American; alliterative, as the African; whether monosyllabic, agglutinative or inflectional.—*Madras Times*

#### TRAINED TEACHERS FOR SECONDARY SCHOOLS.

(Concluded from page 574, Vol. XIX.)

The difference made by training is better seen if we compare our schools generally with those of Germany, grade with grade. There is, we are assured, undoubted superiority in the German work from that of the elementary schools up to the gymnasium; and why? It cannot be that the mental capacity of either master or scholars is always, or even generally, higher; but the masters are trained for their office; they receive better training for the lower schools than that given in our training colleges, and if destined for the higher grades of the profession make a thorough study of education in all its branches. Even in the schools for girls, whose aim is far from a high one in point of attainment, there is the same superior quality of work within the prescribed range, owing to good teaching and systematic direction.

But leaving for the present the consideration of simple teaching power, the mere ability to convey instruction, let us turn to another important aspect of the question, and see what place belongs to instruction in the large work of education, and how far professional training can safely be dispensed with when we look to that larger work. The general public is inclined greatly to magnify the

place held by mere instruction, and the importance of knowledge in the present day, as the passport to all worldly success, tends to strengthen this erroneous estimate. Those who have considered education more closely know that the acquisition of knowledge, merely as such, is of very secondary importance with the young; that instruction is principally valuable as a means of education—a means, that is, of drawing out all the powers of the human being, and helping to form right associations, habits, and character. In every part of education instruction is the most valuable of instruments; since by its means, through the discipline that it enforces, mental habits are established, faculty is exercised, the foundation of future power is laid, and the character is formed in great measure by the associations and habits so founded. Industry, resolution, strength of will, honesty of purpose are mainly cultivated in the young through school-work; but the teaching that is so directed as to draw these fruits out of study, is not that of men who are going through a mechanical task, who know the facts they teach from their books, but know nothing of those wonderful living facts of human nature that are daily before them, of those gradually expanding hearts and minds, of the faculties that may be developed for good or ill, of the impulses that are bearing them on, of the feelings which rightly touched, or carelessly jarred, may, even while the master speaks spring into new motives and new resolutions, lead to the first step in the course which shall make or mar a life. The teacher who draws the educational power out of instruction, who transforms instruction into education, is he who has crowned his other knowledge with the study of human nature, of the capabilities and tendencies of the mind as they unfold through childhood and youth; who has studied the means by which they may be influenced, and has trained his power of observation to discern when and how those means can be applied in individual instances. These are the men who obtain power over their scholars, whose mind sway their unformed minds, whose hearts—if capable of affection—win the affection and trust of the young hearts that beat in such full eager life around them. Doubtless, with regard to this great power as to the lesser one of teaching, true educators have been found who never made this study a preparation for their profession, but nature gifted them as she gifts a few only, and the best of them have mourned over the time when they groped in the dark, unknowing how to use their power.

Unmethodical, unphilosophical teaching is, then, no less prejudicial to the educational power of instruction than to its direct purpose of imparting knowledge. We can hardly imagine that nine out of ten boys would leave school without a spark of interest in knowledge of any sort, if their teachers had studied how to rouse their spirit of inquiry, to stir their imagination, even to quicken their ambition. We can hardly imagine that the debased and debasing process so aptly termed *cranning*, would have become a necessity, if teaching had from the beginning disciplined the childish faculties, roused mental activity, and laid a foundation of sound, accurate information within the range of school study. We can hardly imagine that the moral training of school should then be—as some very distinguished masters admit it to be now—dependent on the playground, and little, if at all, on the influence of the ripe, more cultivated

minds of the teachers, or their force of character and example. The ordinary untrained teacher is just an expounder of books and no more; but evil assuredly grows up in the place of all he has neglected to plant. As his scholars live from day to day, habits and associations are inevitably formed, and they may, they probably will, be false or weak if he has not striven to make them true and strong. The grooves of mental and moral life are daily forming, and he, having trusted to nature to fit him for his work, trusts again to her not to draw out those grooves hopelessly in the wrong direction.

It is our carelessness of true principles of education that makes us indifferent and easily contented when their higher aims are missed. If we had systematically studied even how to give the knowledge we do aim at imparting, we should perhaps learn enough to make us consider more seriously the wide field we have too rarely cared to cultivate at all, and in which the produce has been affected by almost every influence rather than that of direct educational discipline. Many of those influences, both national and domestic, have, thank God, been hitherto so pure and noble among us that in no country, perhaps, could imperfect culture have done less harm than it has done to us, though I am not inclined to think little of our loss. But many things are changing daily now. Life grows more and more complicated; moral training seems thrown in the background by the money-value of knowledge; while scepticism or indifference slackens the hold of ancient sanctions and views of duty. In this state of things education can less than ever afford to lose one source of power. In proportion as we stimulate the intellect, we must, at the same time, raise and widen the exercise of the moral faculties, or education becomes one-sided, and fails of its purpose; and this breadth and elevation can be obtained only by the careful direction given by the educator to the increased mental power, to the more critical observation, the more acute reasoning, the fuller aesthetic development; so that the wider intellectual cultivation we boast of should tend to form higher rules of action, and steadier aspirations towards all good things. If we fail to direct it thus, we shall too surely see our so-called improved education, this fever for wealth-giving knowledge, end in the divorce between intelligence and morals—the saddest thing that can befall a nation. For this reason, if for no other, do we want now, at this very time, teachers who have thoroughly studied the principles of their art; teachers versed not only in methods of instruction, but in knowledge of the human mind, and of the means of developing and directing its faculties, and thus enabled to make the pursuit of knowledge a means of cultivating strength of character and purpose in the midst of so many social influences that favour weak convictions and vacillating morals.

Perhaps some will ask why I, being a woman, have yet said nothing hitherto of female teachers, and have referred to boys' schools only? The answer is very simple: our girls' schools may be good or bad, but they do not stand in the eyes of the world, as the boys' schools do. The latter have the lead, the prestige, the means to do whatsoever is best, and therefore it is all-important to have their example in the right direction. We have able women in the scholastic profession, and some teachers by right divine as among men, but they are not known to the world—no university has been proud of

them—no mitre waits to crown their brows when weary with their unpaid labours; therefore the world cannot be expected to be swayed by their example as it will be by that of men, nor do we apprehend opposition from them. They very generally feel the need of the training we urge, and seize gladly upon all such means of culture as are offered to them. It may be, even, that they will have the honour of inaugurating a better system in England—of being the first to drive from high-grade schools that hap-hazard teaching which has long been banished from the lowest. I feel certain, and am proud of the certainty, that women who have but lately been admitted to the privileges of higher culture, will give this practical proof of their value for it by fitting themselves, whenever the means shall be offered to them, for the career they embrace. But, glad as I am to feel this, I am not the less certain that it is the example of men that must ultimately sway public opinion on the matter.

• An examination of candidate teachers must cover the three branches which together make up the complete professional training:—1. Knowledge of the subjects to be taught. 2. Knowledge of the accumulated thought and experience of the past on methods of education, stored up in books. 3. Practical acquaintance with the art of teaching, and with all the detail of school organization and management.

As regards the two first, no difficulty can arise. Examinations in them would be of the same kind, and admit of precisely similar tests as examinations for any other university honours. The third is the real stumbling-block. No examination can, it is truly said, test the method of teaching; but for this the examiners can take, as is done in Germany, the testimony of schoolmasters under whom the probationary time has been passed as evidence for or against a man's fitness to receive a diploma. In all callings where practical skill is required in addition to special knowledge, a practical course is part of the general training, and can, in like manner, not be tested by examination; but this is not held to be an argument against the efficacy of the latter for the theoretical part. No examination will test how a man will practically meet this or that difficulty in dealing with his pupils any more than a legal examination tests how a man would conduct a case, or a medical examination can test the candidate's keenness of observation and power of pathological analysis; but in each instance what is tested is the student's possession of the right knowledge that should guide him in his practice, and which, joined to experience, will enable him to solve difficult questions as they arise. Another and very formidable class of objectors ask if an examination can test the most indispensable qualities of a teacher—his tact, his patience, his temper, his power of reading characters, his sense of justice? No, none will contend that it can; but it can test the knowledge of the candidates with reference to education; it can test their power of reasoning accurately upon educational subjects, and ascertain that time and study have been given to questions which will form the subject-matter of their future work.

Finally, if we admit to their fullest extent the inevitable imperfection of the test applied by any examination that can be devised to the capabilities of candidate teachers, there still remains this question—Is it better to have an imperfect test than no test at all? Though no examination can guarantee that all who pass it shall be thoroughly efficient teachers, will not the public gain indefinitely by

this negative guarantee that no persons grossly ignorant of the subjects they profess to teach, and of all that has already been thought and done in education—who have given no thought or labour of their own to either the principles or the details of the noble duties they undertake—will be able to pass it, or to assume, as they do every day now, a responsibility they are incapable of discharging, and learn to discharge—if they learn it at all—at the cost of those committed to their care?

That the difficulties before us are immense, none can doubt, but I venture to hope that in the present state of the question they will rather impede rapid progress than endanger final success. If once a principle gets accepted in England the practical character of the nation shows itself by forthwith carrying it into action, and ensuring that it shall be worked out honestly to its true issue. But we must expect to move very slowly, in a tentative way that will be subject to checks and phorisms of alternate favour and despondency. This is inevitable where a large movement must be carried on without any authoritative guidance, and be maintained by the combined efforts of individual forces which are under no obligation to combine. Government is not likely to give any assistance; perhaps it could not give it very effectually except by grants of money. It is true of nations as of individuals, that they have *les défauts de leurs qualités*, and some of the best qualities of free institutions like ours are hostile to long systematic and far-reaching Government action. It may safely be said that no such growth as that of Prussian education could have been possible under Parliamentary Government. No Stein, no William Humboldt could have established a comprehensive system, embracing all classes and all grades of education, in the face of several hundred legislators, each equally free to judge and to oppose what they do not understand. Nor can this be otherwise. Freedom is for the ignorant, for the selfish and the narrow-minded, as much as for the farsighted and benevolent, and the world has not yet seen that Utopian condition where benevolent and enlightened foresight belong to the majority. Hence, we must have patience, and strive laboriously to construct, with such means as we possess, a system which may accomplish the same work, though it never will be so uniform in its action as that which was imposed upon Prussia by a despotic government, animated for once by the noblest patriotism, and worked by the ablest statesmen that have ever turned their attention to such questions. They could remodel everything, and order the whole method of proceeding from the elementary school to the university. We have the elementary schools under Government control, that is, under the control of the Parliamentary majority of the day; the secondary schools of every grade, living under rules as various as their means and purposes; and the universities, powerful and quasi-independent; while education for women is only now beginning to have any method or purpose at all.

It is not wonderful when the work of education has been so disjointed, so wanting in unity and method, that it should be difficult to agree upon a system for training teachers. But such difficulties will gradually disappear as the best opinions of the country more and more declare itself on our side, and real educators, within and without the universities, combine together to enforce principles and organise a practical system for carrying them into effect.

And finally, this also may be hoped, that a system which shall have grown up naturally as all our institutions have grown, out of a strongly-felt national want, will have all the freedom and elasticity which the Prussian system is so painfully deficient in. Without Government support, we shall also be without that official control and rigidity which makes the best authorities in Germany feel that an educational reform is as needful there as we know it to be in England.—*Emily A. Shreff.*

### DEAN STANLEY ON THE EDUCATION OF AFTER LIFE.

ADVANTAGE was taken of the presence of Dean Stanley in Bristol, as one of the special preachers at the opening of the new Cathedral nave, to ask him to address the students of the University College, Bristol.

Dean Stanley, who on rising was received with great applause, which lasted for some time, after making a few introductory remarks, said it had been suggested to him, that it might be useful to make a few general remarks on a very commonplace subject—the education of after life. It was closely connected with the special functions of this institution, and it had this further advantage that its consideration might not be altogether without profit to the more miscellaneous public whom he had to address that evening. First, then, it might be asked in what sense could education be said to be carried on in an institution so elementary and so slightly furnished as this? They had no building, they had no antiquity, they had no traditions, and he supposed they had no discipline; they had none of those things which, in their older institutions, were almost the atmosphere in which education lived, and moved, and had its being. They had not this, and they did not underrate its loss for a moment. But here, at any rate, there were two materials of education, which might continue throughout life, and were, perhaps, after all, the only two indispensable elements—the teachers and the taught. Let him say something of the teachers. When at Oxford, in his younger days, there were discussions about the reforms of the university. There was one want which was regarded as supremely felt, and that was the want of professors; that was, the teachers who might be as oracles whereat the students might come in their several branches of knowledge. Those since that time had been called into existence at Oxford, and they existed here already. He was now speaking personally of the actual professors. But he thought of the advantages to any community of young men of being brought into contact with superior intelligences. No operation in the way of external impulse or stimulus in our passage through this life was equal to the impression produced upon us by contact with persons and intelligences superior to ourselves. It was for this reason a college, like the one at Bristol, must always have a chance of contributing directly to the elevation of those among whom it was placed. A body of men brought together with the enthusiasm of teaching others, with a full appreciation of great subjects, with an ardent desire of improving not only others, but themselves, could not fail, sooner or later, to strike some fire from some one soul or other of those who thus had the opportunity of making their acquaintance. It might not be that they should follow their opinions. The opinions might vanish, but

the effect remained. Socrates left no schools behind him; the philosophers who followed him were broken into a thousand sections, but the influence and stimulus which Socrates left had never ceased, but had continued down to the present hour. If they looked for a moment to the careers of broken hopes, or, on the other hand, of aspirations, of courage, of noble projects realised, how often would they find it had been the recollection of some beneficent, some intelligent, appreciative mind coming across the despondency, the distress, the storm-tossed souls, of which this world contained only too many. Take only the history of that city, or its not far off neighbourhood, how striking and how comforting was the reflection of the peaceful, useful, happy close of the life of George Crabbe, the poet, for eighteen years of Trowbridge. \*All that happiness, all that usefulness he owed to the simple fact that when a poor forlorn youth in the streets of London he bethought himself addressing himself to Mr. Edmund Burke. That great man had the penetration to see he was not an impostor or a fool. He took the young man by the hand, and procured for him the home in which he lived and died. He was the instrument—it was not too much to say the original instrument—of his public career. On the other hand, when with Wordsworth they thought of Chatterton "the marvellous boy who perished in his pride," how impossible it was to avoid the reflection that if he had met with some such guidance as this college now presented, some wise direction that might have rescued him from his own wild thoughts and disturbed energies, they would have been spared the melancholy spectacle of the premature death of one whose name would always be remembered as one of those tragical incidents in the history of the city of Bristol. It was, perhaps, too much to be expected that there should be a Burke among their professors, or a Chatterton among their pupils; but the encouragement and the warnings were both worth remembering. And now, turning from the advantages of this body of teachers, he would turn to the body of students with whom he was chiefly concerned. He could not but plunge into the dark to give any advice to those of whom he could know so very little; but he would do his best, and possibly here and there a word which he spoke might be remembered hereafter. Let them bear in mind, then, both the advantages and disadvantages which the voluntary education of students in after life involved by the mere fact of the freedom of choice, freedom in studies, freedom in subjects, freedom of opinions. A self-educated man was in some respects the better, in some respects the worse, for not having been trained during his early years in the regular routine. They had an illustration of both the better and the weaker side of self-education in the case of Mr. Buckle, the author of the well-known "History of Civilisation." At the time of his greatest celebrity he (the Dean) used to hear it remarked that no man who had been at a regular school or university could, on the one hand, have acquired such an enormous amount of multifarious knowledge and such a grasp of so many details; while, on the other hand, no one but a self-educated man, feeding his mind here and there, without submission, without the usual traditions of common studies, could have fallen into so many paradoxes, so many negligences, and so many ignorances. It was enough to state that one fact in order to put them on their guard against such dangers, and to make them feel, on the other hand, the

advantages of self-education. Over the wide fields of knowledge it was theirs to wander. The facts they acquired would probably take a deeper hold on their minds by having been sought out by themselves, but not the less should they remember that there were qualifying and controlling influences derived from a more regular study which were of the greatest importance, and the absence of which they ought to take into account in judging of the more desultory and the more independent researches which they might have to make. A deaf person, if he might use a familiar illustration, might acquire, and often had acquired, an amount of knowledge and a vigour of will by the exclusion of all the wear and tear, of all the friction of outward influences which filled the atmosphere of those who had the full possession of their senses; but, nevertheless, a deaf person, in order not to be misled in an extravagant estimate of his or her judgment, or his or her pursuits, should always be reminded that he has not the same means of correcting his conclusions that he would have if he were open to the sensible influence of the fibres of conversation, as generally called, which floated about in the general atmosphere, but which for him had no existence. Self-education was very much open to the advantages and disadvantages of deafness—knowledge from some entrances quite shut out. Such knowledge came in, occupying their minds more completely, but always needing to be reminded that there was a surrounding vacuum. With this general encouragement and this general warning he would proceed. There were, at least, in connection with this institution, two chief departments of human knowledge open to those who wished to educate themselves—science and literature. Of sciences, which must furnish the larger part of their instruction, he could unfortunately say but very little, for this simple reason, that from his almost total ignorance he had nothing to contribute on the subject, but he could not be insensible to the immense enjoyment which every branch of it must furnish to those who not only entered into the pleasure, but who made it the actual work of their daily life. Coming to literature what a world of ideas was opened by a public library, or a private library, or by such libraries, great or small, as he had been told had by private or corporate munificence been opened in many quarters of Bristol. What a vast pleasure was in a single good book. They sometimes hardly appreciated the influence which literature exercised over great portions of the world by the influence of those great works on history, poetry, fiction, or philosophy, that rose above professional or commonplace usage, and took possession of the mind of a whole nation, or a whole age. Referring to the effects of the writings of the great Persian poet, Firdusi, in welding the conquered Mussulmans with the indigenous Persians by weaving into poetry their legendary lore, he said it was not necessary to go to Persia for such an example. How vast an influence for good had been exercised over this century by the romances of Sir Walter Scott. Often had it been said—and truly—that no greater boon could have been conferred on Ireland than it had been possible that a genius as wide-spreading, as dominating, and as calmly-judging as Sir Walter Scott could be raised up to give a living interest to the scenery, history, and characters of Ireland. He had given those great examples of the national influences of literature because they showed on a large scale what

could be effected by the finest thoughts being put in the finest words. To be conversant with words of this kind was an education of after-life which never ceased. They read such books again and again, and there was always something new in them. He entreated them to spend, if possible, an hour each day in reading some such good and great book. The number of such books was unfortunately not too many to overwhelm them. Every one who reflected on the former years of his education could lay his finger on perhaps half-a-dozen—perhaps even fewer—books which had made a lasting impression on his mind. They should treasure up this. It was not only the benefit which they derived from them, it was the impression that they left upon them, the lasting power of that which was spiritual and immaterial. How many in all classes of life might see for themselves that which was said, in speaking of his own library, by one of Bristol's most illustrious townsmen, Robert Southey:—

"My days amongst the dead are passed,  
Around me I behold,  
Where'er these carnal eyes are cast,  
The mighty minds of old.  
My never failing friends are they,  
With whom I converse day by day.  
"With them I take delight in woe,  
And seek relief in woe;  
And while I understand and feel  
How much to them I owe,  
My eyes have often been bedewed  
With tears of thoughtful gratitude.  
"My thoughts are with the dead: with them  
I live in long past years;  
Their virtues love, their faults condemn,  
Parrake their hopes and fears;  
And from their lessons seek and find  
Instruction with an humble mind."

And even perhaps some of the youngest or the humblest amongst them need not scruple to add with Southey—

"My hopes are with the dead: anon  
My place with them will be,  
And I with them shall travel on  
Through all futurity,  
Yet leaving here a name, I trust,  
That will not perish in the dust."

But it is not only by books, whether of science or literature, that the self-education of after-life was carried on. When Joan of Arc was examined before her ecclesiastical judges, and was taunted with the reproach that such marvellous things as she pretended to have seen and heard and done were not to be found written in any book which they had studied, she answered in a spirit congenial with, and in some respects superior to the well-known lines in which Hamlet replies to Horatio. She replied—"My Lord God has a Book in which is written many things which even the most learned cleric and scholar has never come across." He would take several examples showing how well after education might be assisted apart from books, and yet not apart from the assistance which such an instruction as that might fairly hope to give them.

The Dean then dwelt eloquently on the educational influences of travel abroad and at home, illustrating them by reference to Swiss Scenery, the history and natural situation of Bristol; upon the deep-

er education to be derived by those who had sense to exercise and to discern between the true and the false, between good and evil, and in the great flux and reflux of affairs with which the peculiarity of our times caused them all to be more or less conversant; upon education in public affairs, with trial by jury and Edmund Burke's Bristol speech as illustrations. He said, in conclusion, this, then, was one of the best efforts of the education of after-life, that it encouraged us to hope that impossibilities might not only become possibilities, but actualities. There was a great society in Bristol called the Merchant Venturers' Society. He was told they held that name because they made some of those mighty ventures in former times by which new lands were found, and new wealth of knowledge brought into the ancient city. But there were still many voyages to be made over the ocean of life; there was still much wealth to be expended on all useful objects; there were still new Atlantics to be sailed. They were all of them merchant venturers. They must all venture something if they would have something worth living for here, if they would have something to look forward to hereafter. *Nil desperandum* must be written over the porch of each stage of their existence. Yes, over every stage. If this was the last word he would venture to say on the education of after-life—the whole of our human existence, is an education, not merely a probation, as was once said, but an education. The possibilities that had overcome the impossibilities in our daily experience showed us that there were yet greater possibilities which might overcome the yet more formidable impossibilities, as they sometimes seemed beyond our limited experience, beyond our mortal sight, beyond the last great change of all. Through all these various changes, and towards the unseen goal, in the words of Edmund Burke, "Let us pass on; for God's sake, let us pass on."

### LORD LYTTON ON PUBLIC SCHOOLS.

SPEAKING at the Harrow dinner at Calcutta, Lord Lytton said:—

Looking back upon the system of instruction prevalent at all our great public schools when I was a boy at Harrow, I must say it has often appeared to me like a huge practical joke, played off by the masters upon the boys. For what, indeed, could be more grimly facetious than to compel a perfectly helpless unhappy youth to waste some three or four precious years of his boyhood in trying to imitate the periphrases of Cicero, the hexameters of Virgil, or the *alcaics* of Horace, when his knowledge of the language he is working in is still so imperfect that it does not even enable him to perceive that *salis frabes* is not Latin for sunbeams, and that the words *commutation condimentorum* do not mean the alternation of the seasons. Yet I myself have seen, not many years ago, these choice specimens of Latinity in, the compositions of Harrow boys; and I am grateful to think that my own boy, if he goes to Harrow will not be obliged to pass there three years learning how to write spurious Latin. Now, the salutary innovations which Harrow has thus wisely accepted, and which have placed her well in the van of educational reform, would, perhaps, have horrified the souls of those fine old scholars—Harry Drury and William Oxenham. But they are gone *proiopso* beyond the reach of all the chances and changes of this mortal life;

and on behalf of a younger generation. I hope to see the day when little boys, instead of being flogged for using *crabs*, will be encouraged to consult the best translations of all the difficult Latin and Greek authors; thus acquiring an intelligent appreciation of the main characteristics of classical literature, which may afterwards furnish them with a powerful stimulant to the labour necessary for verbal scholarship. "I hope to see the day when grammar, relegated to a late stage of the school curriculum, will be taught on rational principles, as one of the sciences of language, in connection with logic and comparative philology; nay, as Burns, in one of his poems, included amongst his aspirations a wish that one of these days the Devil himself might be saved! so I confess to a sneaking hope that the day is not far distant when even that large class or file, and generally dirty, boys who used to be, in school-hours, always at the bottom of their form, and out of school-hours at the top of some tree; boys who carried live frogs in their pockets, and whose desks were stuffed with birds, eggs, while their brains remained empty of Latin and Greek, may find at Harrow some encouragement to fit themselves for becoming intelligent naturalists, instead of being condemned to figure, through their whole school course, only as classical dances. I am aware that all progress in this direction is exposed to error, and must be prosecuted with great caution. I am aware that all systems founded on long established prejudice or custom are like the champion in the Italian poem, who went on fighting after he was dead. But I rejoice to think that the authorities of our old school have shown no disposition to do for any absolute educational system, however time-honoured it may be, what certain savage tribes are said to be in the habit of doing for their dying sovereigns, and sacrificing the lives of their youths in the vain hope of thus prolonging a life already decrepit. Now, in this matter of educational reform, I venture to think that the present Head Master of Harrow, and his able assistants, have most judiciously conciliated progress with prudence. Between revolution and reform there is much the same difference as that which exists between the sloth of the West Indies and the sloth of the East Indies. The former destroys the bark and sap of the tree on which it feeds and the tree perishes. The latter cuts only the redundant leafage, and the tree, thus timely pruned, flourishes with increased vigour. Now, so far as I am aware, all the enlarged means and opportunities of general culture which Harrow already affords to her pupils, have not yet, in any wise, lowered their proficiency in the older forms of classic scholarship. I believe that from Oxford, and from Cambridge, Harrow boys still annually bear away an undiminished portion of the

*Doctarum hedera premia frontibus*

But, be that as it may, mere book learning really plays but a minor part in the practical functions of a great public school. Some wicked jester once said of our great English Universities that the reason why there is so much learning in those venerable institutions is, that the men who go up to them bring there, each a little learning, and that the men who leave them carry away from them no learning, so all remains at the universities. But most of us, I think, send our sons to a public school, not so much to make scholars of them, as to make



men and gentlemen of them. And I am persuaded that all of us, dunces and scholars alike have carried away from Harrow lasting gains, which must ever endear to us the memory of our old school. Amongst such gains, I reckon a certain pleasant sense of life-long camaraderie. The charm of select community is a great, though often dormant, motive-power in life; and it so forcibly appeals to every variety of character that, when some one founded a club, to which none but ugly men were admitted, and which was called "The Ugly Club," the members of that club were very vain of belonging to it. But for any vanity we many feel in belonging to our old school, we Harrovians have, at least here, better, and more natural grounds. If we cherish the recollection of our modest little duckpuddle (which I am thankful to say has not yet been reformed off the face of the earth), we know at least that even its ugly ducklings have often turned out swans in after life. If we honour the memory of our founder, John Lyon, we know that John Lyon has been for centuries one of John Bull's most practical benefactors; and if we are proud of our old school, it is because our old school may well be proud of its old pupils: for Harrow has given to England two great Prime Ministers, and to Europe one of Europe's greatest poets; and when we come to India, I believe that Harrow has given us three, if not four, Governor-Generals; I know that Lord Teignmouth, as his biography tells us, was educated at Harrow. I believe—though I am not certain—my friend Mr. Cunningham will probably be able to correct me if I am wrong—that both Lord Dalhousie and Lord Hastings were Harrow boys; and, if that be the case, then I think that Harrow may boast of having given to India one at least, of her greatest rulers since the days of Clive and Warren Hastings. At any rate I wish to take this opportunity of adding to the list of those Harrovians who have rendered real service to India, the name of one of my old school-fellows. During the terrible famine which now, for nearly two years, has devastated the Deccan and the whole of Southern India, no public servant has, in his own sphere of duty, shown greater common sense, or more uncommon energy; few public servants have in their own branch of the service, rendered services more efficient, or which, for my part, I more value, than my old school fellow at Harrow—Dr. Hewlett. It is a curious coincidence that Harrow School, like the British power in India, was born during the reign of Queen Bess; Harrow School, like the British power in India, has attained its highest development during the reign of Queen Victoria; and as a Harrow School boy, I am glad to think that this coincidence of dates is not the only connection between them.—  
Correspondent of the Pioneer.

### WHAT WE MEAN BY EDUCATION.\*

By THE REV. MARK PATTISON, B.D.

WHEN a man is put up on a platform to address an audience on education in this country, what he says generally takes the following form:—He roughly classifies schools into the elementary, the middle class, and the public grammar. He begins with the elementary. He takes the figures of the Government returns. There are so many

million children living between the ages of eight and thirteen. Of these so many are on the register of our schools, and so many are in regular attendance, and so many are qualified to earn grants, i.e., have made 250 attendances. He then contrasts these figures with the figures of 1867, and calls upon you to join him in congratulating the country upon the progress which it has made in the work of primary education. Passing to the middle schools: well, it is difficult for the most sanguine optimist to extract matter of self-congratulation from the existing state of middle-class education. But our speaker may point to the Oxford and Cambridge Local Examinations, and show you the gradual increase in the number of boys and girls who have passed, on a comparative view of the last ten years. Coming to the grammar schools, our speech-maker, while regretting the conservative obstinacy with which these venerable institutions adhere to the obsolete classical curriculum still finds some occasion to note progress, in the fact that chemical laboratories have been established in each of such schools; that much less time is given to Latin composition, while modern languages are being more insisted on. He will point triumphantly to the examinations instituted by the Joint Board of the two Universities as a step in the right direction. And finally, in the topmost sphere of education, there is the institution of the Cambridge Higher Local, the Examinations for Women, Girton, and Newnham, the establishment of Chairs of Education at two of the Scotch Universities, the impending reform of the colleges in Oxford and Cambridge under the Act of last Session, and the University Extension scheme, which Mr. Gladstone expounded at Nottingham to be nothing less than the bringing university education to the centres of population, and within the reach of young men already engaged in business.

All these, and the catalogue might easily be enlarged, are important facts and unmistakable signs of interest in a something which is called education. We have all of us listened to speeches and addresses in which these achievements have been placed before us in a pleasing light, not without some self-complacency at the thought that these vast steps have been made in one generation, and that our own. But if our speaker happened to be of a morbid or desponding temperament he would be able to present the same facts in a light exactly opposite. Taking the elementary schools, he would handle the same figures thus: The estimated population of England and Wales, between the ages of 7 and 13, deducting 1-7th as of a class not usually found in elementary schools, is 2,800,000. Of this total only 70 per cent. is found upon the register of some inspected school leaving thus 30 per cent. of our children who are not at school at all. But, again, of this 70 per cent., the proportion of regular attendants—i.e., making 250 attendances in the year—is only 60 per cent. Of this 60 per cent., again, only 50 per cent. were presented for examination, i.e., 38 per cent. of the total 2,800,000 children. But as only 58 per cent. of those presented passed in all three subjects, we come down to the low total of 22 per cent. of our children successfully instructed. This, our speaker might say, though it may be due to unpreventable causes, is hardly a result of which we can be proud.

When he comes to the middle-class schools, a pessimistic orator has it almost all his own way. Dr. Abbott is not a pessimist, but he confessed in 1875 that "middle-class education was very bad, and

\* A Lecture delivered to the Birmingham Teachers' Association.



that there was no prospect of its getting better." I felt myself obliged last year to adopt and emphasise this assertion. I have had one or two expostulations from masters of private boarding schools, but the arguments they used, derived from the number of subjects they taught, and the success of their pupils in local and other examinations, proved nothing but the flourishing condition of their enterprise, which I never questioned. The middle-class school is mostly a private enterprise, undertaken as a commercial speculation often by men who have failed in some other "walk of life," or at least who have offered no public guarantee of their capacity to teach. As the classes which frequent these schools do not value the instruction offered in them sufficiently highly to pay much for it, the proprietor is obliged to keep a boarding-house, and to pay his teachers out of the profits of the boys' board.

In logic, two contradictory propositions cannot be both true. But in practical life, two opposite views of the same facts may be not only plausible but actually true. You will probably admit that the two aspects of our educational progress, the optimistic and the pessimistic, to which I have adverted, are equally justified. What should an impartial-minded man do in such a case? Try to combine both views into one balanced judgment? Perhaps; but such a compromise enfeebles action, and paralyzes speech-making. This paradox of the equal truth of opposites suggests to me another course. It is only with superficial views that opposites can seem to blend with each other. Let us go beneath the surface facts—let us fall back for a moment on first principles. What do we understand by this word education, which we all have in our mouths?

It is only within the last fifty years that the word education has become a household word among us or has acquired its peculiar significance. No doubt the thing was there if the word was not. Indeed, the eighteenth century people—those who talked and wrote—were apt to pride themselves on their superior illumination. If you ever look into their books, you will find them pervaded by a placid contentment with the acquisitions of "this elegant and polite age." They did not use the words education, culture, cultivation. But it is certain that they had the thing. It was not till after the French war, when we were emerging from the period of commercial distress which attended the return to cash payments towards 1820, that Lord Brougham sounded the note of the education of the people. It is observable that this favourite phrase at first was rather knowledge than education—useful knowledge. "Knowledge is power" was an axiom which had great currency. In 1833 the first Privy Council grant to village schools was made. From that time the unceasing efforts of the party of progress was directed towards what became known as "elementary education." It has taken fifty years of hard struggle to get to where we now are, when a system of parochial schools has been spread over every portion of the island of Great Britain. The energy and the interest are not abated; we are turning it now upon the middle schools, and already finding that the curriculum of the three R's is too narrow even for the elementary schools. What is the object of all this stir? What is the national ideal which underlies this sustained energy and prompts these sacrifices? Why do we understand by the word which sums it all up, the word education?

The oldest summary of education is that of the Persians—the Persians of Cyrus—"To rule, to shoot with the bow, to speak the truth." That is the accomplished military chevalier—to manage the horse, to handle the best instrument of warfare then known, and finally, to speak the truth; not in the narrow sense of not telling lies, but said of the attitude of the whole nature—the gentleman's attitude of integrity, honour, and fearless loyalty. Observe that this ideal of education is one of capacities, not of acquisitions. The accomplishments of the perfect knight are not what he knows, but what he is and can do. We know what the Greeks—the Greeks of the best time—meant by education—the establishment of perfect habits. Man is a bundle of habits. The perfect man is he who has all the perfect habits of mind and body. Education is the agency by which these perfections are created. Philosophy was a life, not a system which could be written down on paper. Such was the tradition as it grew out of Greek experience. Education meant not knowledge, but capacity. It is true that even then there were in Athens professional crammers, and men who defended craft on principle. These were the Sophists, teachers who undertook to furnish their pupils with ready-made talk, which could be produced on any occasion. They could write a leader on any side of any question without knowing anything about it, and that so cleverly that the opinion of the wisest would have no weight at all in comparison. As Greece went down in virtue, honesty, and patriotism, the race of crammers came more and more to the front, and the term "crammer"—(*Sophistes*)—which in the good time had been opprobrious, lost its offensive construction and came to mean simply public tutor, professor. But this was degeneracy and decay. In the uncorrupt time, education, as I have said, regarded what the man *was*, and not what he could *say*; it was understood to comprehend all the influences which mould character. Compare this great conception of education with our notion of it—*e.g.*, in the phrase elementary education—reading, writing, and arithmetic. I don't dwell now on the imperfect way in which these three things are learnt, or upon the small percentage of our children who learn them. Suppose that every child in the kingdom learnt all three up to the highest standard, and stayed at school till thirteen out. Well, it would be a vast improvement upon the present state of things, but how far short it would be of moral and mental discipline which qualifies a man to comprehend and fulfil the duties of his position as a citizen!

One point the elementary school has in its favour. What it strives to confer is not knowledge but faculty—to speak words and sentences distinctly, to handle the pen and form letters, to manipulate numbers, whole or fractional; to utter and combine musical notes. To aim at this is to aim at endowing the pupil with a power which he had not before. These things cannot be crammed. As we ascend the grades of schooling we find it becoming more and more literary. First it aims at communicating information more than endowing with capacity, and then this information is selected, not with a view to its intrinsic value, but with a view to its fitness for being written in answer to expected questions. In our higher schools and universities we have departed two steps from the true aim of human training. First, we aim at imparting knowledge, not at creating faculty. Secondly, the knowledge we wish to communicate is not real know-

ledge but a simulacrum of real knowledge—other people's clever words about things, which our pupils commit to memory, and write out when we ask for what they know.

And here I cannot help adverting to a common fallacy much in the mouths of people who write against classical education. You often find them using the phrase, "learning Latin and Greek," as equivalent to that other expression, "classical education." This substitution of the synchym keeps out of the argument all that classical education is more than learning Latin and Greek. I am not now defending classics as the material of school teaching. I am not raising the question to-night. I am only directing your attention to one feature of the old classical grammar school system. That system contained that very element which was always, till our time, considered the chief element of education, and, indeed, to be the meaning of the word. The classical system was training, and not information. In its great exercise, the habit of *vier voce* construing, it possessed a mental discipline which could not be stimulated by cramming. The knowing the language was of subordinate consideration, if of any, in the system. It set little store by "information." The gentleman and scholar, which was the ideal of this system, was often sadly ignorant of common things; but then he was also often a gentleman and a scholar. Latin and Greek are of no use in after-life. French and German are. Very well; give up Latin and Greek, and put French and German in their place. But whatever be the comparative language which you select to lay alongside of his mother-tongue, see that your pupil is exercised in the oral transference of the complete meaning of the original page into the equivalent words of his own tongue. This exercise, and not the fact that the language was Greek, was the salt in the old classical system, and which compensated for its many defects.

I return to my inquiry as to what it is we now mean by education. We have almost lost sight of the old idea of liberal training. Before most audiences one would hardly venture to use the word "liberal" in this sense. It has ceased to be understood. The truth is, the general public has not at all realised, and even the teaching profession has imperfectly realised, the degree in which the prevalence of examination has revolutionised the theory as well as the practice of education. The theory of education once was, not that the boy learned what was useful to him in after-life, but that he was moulded into a man and a citizen; that he was to be trained by the exercise of his faculties to their virtuous employment. The examination system has extinguished this ideal. The engrossing object both of teacher and taught now is to carry off the prizes. The barrier between the school and the world is broken down. School-time was a time fenced off from the world in which we had leisure to form men before they were hunched on a professional career. It is now a profession in which boys can earn, like men, profit and distinction. Education has no value in itself; it must be tested by its results, by the prizes and distinction earned. That the matter of the examination is literature, or mathematics, or science is a quite incidental and irrelevant circumstance. Neither the boy nor his parents want the literature, or the mathematics, or the science. What they want is the success and the rewards. "I was studying law," said to me a fortnight ago a youth who had just gained a scholarship,—“I was

studying law, but I am quite ready to read classics if that is the condition of holding the scholarship." In "Tom Brown," Mr. Brown, sen., says, "What is the use of my telling Tom to mind his Latin and Greek?—he knows I don't care a pin about them." The teacher no longer stands to the pupil in the relation of an exemplar of wisdom and knowledge, who easily correct his mental defects and inspire him with noble aims; he is a coach, who has to take the pupil as he is, and put his qualities, whatever they may be, to the best account in the way of earning marks. He must teach him the art of holding in his memory the contents of certain manuals on as many subjects as possible for a given time—i.e., till the examination day. When the examination is over the information has served its purpose; the trick, and two by halves has been scored, and the hand held has been dismissed from memory for ever. This is the process to which we now apply the term education. It is the struggle which men have in the world to succeed, and to earn their living by competition with each other, transferred to the school.

#### PLAY AS AN EDUCATIONAL FORCE.\*

In tracing the course of educational ideas and practice during the last 300 years we find a constantly-increasing tendency to "make things pleasant" to the young. Making things pleasant generally connotes some sacrifice of principles, but in this instance, strange to say, principles are decidedly in advance of practice, and would long ago have done away with the chief disagreeables of school life. In Shakespeare's time it was no wonder that the luckless boy "whined" and crept "like snail unwillingly to school." He was to be imprisoned there for ten hours of the day, with the probability of having flogging added to imprisonment. Contrast this "education" with that of the young Athenian nearly 2000 years before, and we see that those whom the schoolmaster ignorantly worshipped educated their young by happiness, and would have scorned a system the outcome of which is best described by Boileau's well-known line—

"Pour honorer les morts faire mourir les vivants."

Three centuries have not sufficed to free our schools entirely from the bondage to mere book-learning which they fell into at the Renaissance, but every change has tended to bring life and happiness into the school-room, and at last the most prominent thinkers seem agreed that playing instead of being the negation of learning is really the most effective part of the child's education.

This notion is not by any means a new one. The very derivation of the word "school" and its Latin equivalent (*ludus*) connect learning with the pleasures rather than the pains of life; and even since the Renaissance many great authorities have held with Ascham that "the difference of learning and pastime" is "an opinion not so true as some men weene." In this century Froebel has organized the play of young children in such a way as to give them by means of it a systematic education. Froebel's principles are making way both in the Old World and the New, and his plans, which are much simpler than his principles, are still more widely adopted.

\* "What is Play?" by John Strachan, M.D.  
Edinburgh: David Douglas, 1877. Price one shilling.

The most advanced thought in the same direction is contained in the little book which we have named below. Its author is not a schoolmaster but a physician; so his principles are at present *in vacuo* and will require a good deal of adjustment before they can be of use in the atmosphere of the schoolroom. There is however so much truth in the book that all teachers capable of learning would get much benefit from reading it. As the volume is published at one shilling and can be read in two or three hours, all teachers so minded may test this assertion for themselves.

In spite of its singularly low price the little book is beautifully printed and got up. They seem to manage these things better in Scotland than further South.

Here and there we have remarked signs of haste or carelessness in the writing, and have had to read a few sentences more than once before we caught the meaning. There is another criticism which occurs to us on a more important matter. This book aims at advancing thought, and if the writer's own thoughts are not conveyed to us with rigid accuracy, no one can follow him. We must therefore protest against all such vague phraseology as we find here about "nature" and "her" intentions. Nothing seems more according to nature than to exhort the schoolmaster to make himself acquainted with her method and accommodate his own to it, but it is no less according to nature to feel great irritation when such advice is offered us.

Though Mr. Strachan leaves us without any definition of "nature," he is more explicit about his notion of "play." "Play is all voluntary exercises in the young, prompted by natural inclination, and producing pleasure." When he says "voluntary" exercise, he clearly does not mean that the child's will should take the initiative. Everything is *play*, in Dr. Strachan's meaning, which the child does willingly and with a view to pleasure. In this sense a great deal of the work of the schoolroom may be turned into *play*; and perhaps we might even say that all work which educates is *play* also; certainly the pupils do it willingly, and get pleasure from it. But Dr. Strachan excludes all work done, not for the pleasure it gives, but for some ulterior object to be gained by it. Even when thus limited, *play* may still have a good deal of school time devoted to it. Young people delight in *doing*, and under judicious guidance they may willingly do even sums or copies and get pleasure from them. Thus the *play* element is always present where the teaching is really good, for if the sums or copies are a bore to the learner, there is something wanting in the teacher.

"Playing" in this sense is quite consistent with compulsion. In some schools the games are compulsory. We will not now discuss the merits of this system. It gives, no doubt, a distaste for the game in some cases, and in those it works badly; but it often happens that a boy has to play football, say, when he would if he had a choice have amused himself in some other way. There is an amusement which he likes better than football, but he may like football for all that, and may thoroughly enjoy his game. It is the same with "play" in the schoolroom. A good teacher makes his pupils work willingly and with pleasure, and thus find their work *play*. But though the work be pleasant, it will not be so pleasant as other occupations such as out-door games, and the best teacher in the world must therefore exercise a controlling and compelling power,

or pleasant occupation in the schoolroom will be neglected for more pleasant occupation out of it.

The following gives us the main contention of the educationist in his disputes with the schoolmaster.

"It seems to be generally taken for granted that children and young people have a natural dislike to learning; but this, as I have endeavoured to show, is very far from being the case. On the contrary, they are naturally eager to learn, and they acquire a very great deal of practically useful information by the spontaneous action of the observing and inquisitive faculties; and, later, by voluntary reading and investigation—information without which men would be little better than imbecile, although possessing all the learning usually conferred by the school. The idle school-boy who shows a strong disinclination to learn lessons, and can only be got to do school work by fear of punishment, shows no such disinclination, but, on the contrary, a keen desire for the most active mental exercise. Dr. M'Nish thus writes of his own school-days:—

I was uniformly 'dolt,' and was a most wretched scholar; indeed in every branch except drawing, I was considered extremely stupid, whether in Classics, Arithmetic, French, or Geography. I never was good at anything until I attained the age of sixteen, when, I became a tremendously hardworking student of medicine and general literature, two subjects which I liked, and which I pursued with an intensity which, I may safely say, was never surpassed. Indeed I could do nothing until I became my own master. The trammels of school education were most insufferable, and I look back to the floggings, wranglings, and heart-burnings of my school-boy days with the greatest loathing. Whenever the tension of scholastic bondage was removed, and I was left to do as I liked, I felt quite another being, and acquired the knowledge I was partial to with readiness and zeal." Sir Isaac Newton, Dean Swift, Samuel Johnson, Sir Walter Scott, Lord Byron, Sir R. Murchison, and many, if not all, other eminent men showed, when boys, a dislike for and were idle over their lessons, but were anything but idle in the playground or in their peculiar pursuits and amusements, with the result shown in their after-career. It is not therefore learning or mental exertion as such that children object to, but only that peculiar form of it prescribed by the schoolmaster. It is of consequence, then, that we should ascertain if possible what is the reason of the dislike which children admittedly have to school work," pp. 92, 93.

The schoolmaster will here object that geniuses cannot be quoted for such a purpose as this. They cannot be made by any school course, and must not complain if they are sometimes taken for "ugly ducklings." Besides, it is not true that all or nearly all eminent men were considered stupid school-boys. Some of them, like Macaulay, have been "eminent" even in their school days. A far better argument in defence of our author's position, may be derived from the experience of schoolmasters whenever they introduce a new study. It almost invariably happens that some boys hitherto "idle" or "stupid" are interested by the new study, and the intellectual awakening has its influence even on their progress in studies for which they have before shown little aptitude.

Dr. Strachan makes a suggestion to which we would direct the notice of those who might aid in carrying it out:

"It is not the knowledge of either good or evil, but the practice of it, which forms the character. . . . This law might, I believe, be turned to account with great effect in rescuing the children of the degraded and criminal classes from their heritage of crime and degradation. Left to play in their native haunts, there is almost no hope of their escape from a career of crime, and school instruction will only add to their powers of mischief. If we can but change the circumstances which bear upon their play, a corresponding change will take place in the character of the resulting minds. When we call to mind how naturally and certainly children flock to whatever the most amusement is to be had, we have possession of a clue which may lead to the greatest results. \* If we provide, within reach of such children, greater facilities for amusement than they can obtain elsewhere, surely no very difficult matter, we shall require no compulsory officer to secure their attendance, and shall be able to bring the most beneficial influences to bear upon their play. A building devoted to such a purpose, and properly conducted, might do infinitely more in the way of reclamation than any number of schools with compulsory attendance and unlimited powers of punishment." pp. 58, 59, 60.

Dr. Strachan very well illustrates the uses of play by his remarks on the frolics of young animals. Of the Kitten he says:

"There is evidently something more in the play of the kitten than in the gambolling of the lamb or the capering of the foal. A little consideration will show that this something is neither more nor less than the desideratum we are seeking; that, in short, the kitten, while seemingly only bent on amusement, is diligently practising all the arts upon which it will afterwards have to depend for subsistence—crouching cautiously, as though to keep out of sight, and then springing suddenly upon small inanimate objects which could not see it if it stood clear, and which would not get out of the way did it go more leisurely to work. Not the present circumstances, but the future necessities regulate its movements. Any small object in motion is an irresistible temptation to a kitten, and if an object will not move otherwise, he will drive it with his foot to give it the semblance of life, and himself the practice necessary to enable him to capture live animals in future. The mother cat, also guided by instinct, assists in this practice in many ways. First by giving her tail as a plaything—gently moving the tip to tempt the kitten to spring upon it, then whisking it suddenly away to excite it to greater caution and activity; then she joins in the frolic, and teaches by examples; and finally, as a finishing lesson, she brings half-dead mice for the kitten to practice upon. Soon after this the kitten is driven off by the mother, and left to shift for itself. Then the same arts which it has been practising in sport are turned to account in the earnest, necessary work of life." pp. 71, 72.

His observations on the difference between the games of boys and of girls are also well worth quoting, but we prefer recommending our readers to get the book for themselves. — *English Journal of Education*.

#### NATIVE INDIAN LETTER-WRITING.

TERSE English is just what is wanted in India. It is one of many wants, but a great one. It is unknown to most Natives, and it is cultivated by few Anglo-Indians. \*The English of Addison and

Cowper, of Walpole and Macaulay, is that which the latter-day world wants. The elaboration of Burke, the sonorous sentences of Clarendon, are more admired than read. \*Better the plain speech of stammering Mr. Lamb, and better the sober speech of Mr. DeQuincey, with his abnormal love for laudanum. \*All are fine men in their way, but Walpole was too Frenchified, and Cowper's Calvinism was desponding and apt to give the reader the "blues." Clarendon's diction rose too high, just as Milton's did. Macaulay was too antithetical and too didactic. The English world of readers wish to go back to such as Bacon after all. We must have terseness. The composition of the fact. Perhaps next to the Foles, some Hindus are the best linguists in the world. Look at three of our men! There is Sir Salar Jung and Sir Madhava Row, of whom nothing need be said. Then, at some distance of course from these great men, we have a young Madras Civilian of rising eminence. For many a long year our Anglo-Indian linguistic talent is not what it should quite be. But, not being absolutely perfect ourselves is no bar to our pointing out the failings of others. In a very great number of Natives, redundancy of various kinds, in their ordinary diction, on matters relating to common subjects, is what is prominently to be objected to, and what we say as the shortest word is often the strongest word.

At present a fashion reigns. It is to despise French literature. \*It is to despise its style. \*That style is just the one in which we write this brief paragraph. It is crisp as a thin, dry toast. A little *enlure* on it, please, and you have it—perfect! It is the style of Victor Hugo. No more praise is needed. The day will come when his will be immortal praise. His diction, certainly, the perfection of perspicuity.

Now, we do not desire our Native readers to imitate so Walpolian a style, which is too "jerky" to suit English taste: but we advise our Native friends, who write so well, and whose correspondence is oftentimes so interesting, to practice a simple and an uninvolved style. There is no utility to write of a drainage of a Ganges, or of St. Thomas's Mount as if it were Mount Everest. We are not everybody here. Subject is everything at the root: style is most of that which branches forth before casual eyes. These are simple truths. It is wonderful how often truisms have to be repeated. Even the solemn and blessed truisms of the Lord's prayer is ordered in Church to be repeated many times a day. Most of our great *mantras* of the East are truisms. Mr. Andrew Wilson found them in Tibet; we find them at Comorin: some folk may not regard them; wise men do, and repeat them.

We have a great lesson to learn from Hindus. We cannot shirk it. But our young scholars of India must be, of all things, perspicuous. No grand, rolling sentences, please! Let us have idiomatic English such as Thackeray wrote. Let us have no elaborate, abnormal, Anglo-Indian Hendecasyllabics. We can write big words; but we prefer sweet simplicity to the prodigious profundity of the profuseness of the phraseology of the pundits of Hindustan!

Our remarks are chiefly drawn forth by the many recent letters in Indian newspapers purporting to be from Natives of this country. Many of these letters are uncommonly good. But there is in most of them a strange preponderance of long sentences. Long sentences are like long bows, seldom to be drawn. We are not all Robin

Hoods. In the employment of phraseology we are not all Charetons. Let Hindus remember that a long sentence is one of the most difficult weapons of attack or defence to be used in verbal warfare. They are writing in a foreign tongue. No English versifier in Latin ever wrote as well as that tolerable versifier Ovid in his own language. That exile from Rome spoke his mother-tongue. Here was all the difference. He had not come from "*Ultima Thule*." England is to India, practically, an *Ultima Thule*. Ovid was, in all evidence, a pretty fellow, fond of pretty women; and the great reigning Caesar sent him off to the land where they are fighting now, Turk and Slav, with the "Blue" Danube running "Red" at their feet. Ovid was a bad scapegrace, but, just like Tom Moore, a very good rhymist. But the Court of the day disliked his amorous elegiacs. Yet the best Latinist who ever lived in England could not match a line of his in Latin. He was quaint, and crisp, and lovely, and enticing. It was dangerous for him to tread the Seven Hills. One of the Vestal Virgins might have married him, and that would have been almost as bad a crime as some clever young Native gentlemen commit, in almost all our Indian contemporaries, of writing, in their correspondence, very long sentences, and not marrying but murdering English diction.

Indian style is just the opposite to English. It delights in sentences a page long. Let the Tamil student read the Panchatantra, and see this for himself. Yet we would have the Hindu write well both as his own language dictates, and as ours. "Do this, but leave not the other undone." One style of writing need not corrupt the other, they are so entirely different. We are sorry to hear experienced Schoolmasters, on all hands, telling us that English is wholly the fashion, and the vernaculars despised, by Natives. That which we desire is not the forsaking of the old love, but the better wooing of the new. Let the lads of our colleges drink of "wells of English undefiled." Let them write in simple, plain terms, and read every day a page or two of Addison or Washington Irving. The older Burke grew, he wrote more simply. There is a great power in the simplicity of a powerful orator's language. For their own sakes we wish the Hindus would cultivate simplicity. Turgid writing only excites amusement and contempt, and really able Natives think it fine to write turgid English. Schoolmasters throughout this Presidency should aim at making their scholars write simply and tersely in English. We have taken up our proverb: we leave our words to be weighed.—*Mudras Times*.

#### STUDIES IN INDIAN PHILOSOPHY.

WARD, in his account of the Hindus, was the first to bring to the notice of English scholars the first principles of Hindu Philosophy but his account was exceedingly brief, and, having been compiled from elementary works, did not, in any way, meet the requirement of European philosophical writers; it was not, therefore, until Colebrooke wrote his remarkable essays on Hindu Philosophy, in the Transactions of the Royal Asiatic Society of Great Britain, that European scholars got a really scientific and lucid sketch of what the Hindus had done in the domains of Philosophy. As the works of ripe scholar and distinguished orientalist those essays were above all praise. They were however, wanting in one important respect. The

gave the substance of Hindu Philosophical ideas in the language of the essayist, but not in their *ipsissima verba*, and in a subject like philosophy, where a great deal depends upon the words used, they could not be utilized for any critical purpose. Raja Ram Mohun Roy's essays on the Vedanta doctrine, supplemented as they were by translations of some of the Upanishads, were better; but they too were fragmentary. Windischmann's Vedanta-Sara served only to rouse, but not to satisfy, the curiosity of continental savants, and the first really valuable exposition of Indian Philosophy in English was Colebrooke's translation of the Sankhya Karika with Wilson's translation of its commentary and his own original commentary on it. This showed how vast and how deep had been the researches of the Indian sages in the field of Metaphysics. Even this, however, was deficient in one respect. It was an epitome, and not the original text on the subject. Sometime after, Dr. Muir offered a handsome prize for an essay on the leading systems of Hindu Philosophy, and three competitors appeared on the field. Two of these, Dr. Ballantyne and the Rev. Mr. Millens carried away the prize and the third was the Rev. Dr. K. M. Banerjee. A great deal of information was brought together in the works of these competitors, and would have proved useful, had the essays not been marred by too strong a spirit of polemical controversy and sectarian zeal. The object which the writers set before them was, not to give a faithful account of Hindu Philosophy, but to display their own powers of ratiocination in controverting the dogmas of the Hindu sages, and to establish the pre-eminence of Christian philosophy. Such a course could never satisfy the wants of unprejudiced scholars. It is well-known that of the six leading systems of Indian Philosophy, each has a series of aphorisms or *memoria technica*, which, with their commentaries, form the basis of each school, and as long as those are not brought to the notice of European scholars, so long it is hopeless to expect that fair justice can be done to the intellect of the Hindus as a philosophical nation. To meet this requirement Dr. Ballantyne took in hand those original texts; but, with the profound learning and zeal of German scholars, he was wanting in their perseverance, and, instead of devoting all his energies to one or two particular schools, took up all the six at once, but could not finish any. Of the *Yoga system* he published two chapters; of the *Vedanta* one or two sections; of the *Mimansa* about as much; and of the *Nyaya* a single chapter. And of these he translated only the aphorisms with a very unsatisfactory and meagre abstract of the commentaries; and the aphorisms without their commentaries, proved all but useless. Of the *Sankhya* he translated the whole of the text; but the commentary was deficient. It is, therefore, with much interest we notice that an attempt is being made at Bombay to supply faithful translations into English of all the six texts. The work is to be published under the title of *Saddarshana-Chintamani* and five fasciculi have been already brought out, containing the Sanskrit text with Marathi and English translations, of the *Mimansa* doctrine, together with a commentary in English. If persevered in, and the serial be completed, it will be a valuable accession to the library of the oriental scholar. The *Mimansa* is by far the most important in connection with the religion of the Hindus. Its object is to reconcile the rituals of Hindu worship and the legends of the Puranas with

philosophy, and the success with which the reconciliation has been effected by Jaimini is worthy of the highest praise. To quote an instance from the writings of the Mimamsist:—European writers have, for a long time, and very justly, condemned the Hindu Shastras for having attributed to Brahma the odious charge of a disgusting incest. The Mimamsists show that the whole of it is a mere myth. Brahma is but another name for Prajapati or the Sun, and the Dawn which precedes sun-rise, is poetically and very aptly described as a fair maiden, born of the Sun.\* Therefore, as the Sun follows the Dawn, it is in poetry described as chasing the maiden, and since the Dawn merges in the Sun as soon as the latter has risen above the horizon, the allegory is complete. Other myths have been treated in the same way, and it is no ordinary praise to say that the Indian gymnosophists, some 2000 years ago, adopted a line of philosophical argument which would not be unworthy of the greatest German scholars of the present day. The publication of a work of this description\* in a language readily accessible to the rising generation of the Hindus, as well as to scholars in Europe, is an attempt which deserves every encouragement and we heartily wish its editor success in his undertaking.—*The Hindu Patriot*.

#### APPOINTMENTS.

Appointments from 16th January 1878 to 14th February 1878.

K. Vishweshwara Row, to be 8th Assistant Master, Provincial School, Mangalore, on probation on Rs. 25 from fees.

The following appointments are sanctioned in the Provincial College, Rejuluamduy.

A. G. Subramania Iyer, B.A., to be Assistant Master on Rs. 175.

P. Srinivasa Row, to be Assistant Master, substantive *pro tem.* on Rs. 90.

D. Narayanasawmy, B.A., to be 11th Assistant on Rs. 75.

G. Venkatramiah, B.A., substantive *pro tem.* 5th Assistant on Rs. 75.

P. Annasawmy Iyer, B.A., to be 6th Assistant on Rs. 70.

V. Vasudeva Sastri, to be 7th Assistant substantive *pro tem.* on Rs. 55.

M. Singaravelu Moodelliar, to be Head Master, A. V. School, Guntoor.

C. Rungiah, to be Second Master substantive *pro tem.* Government Girls' School, Mulapet, Nellore, on Rs. 8.

M. A. Saminada Iyer, to act as Assistant Master on Rs. 40 at Salem Zillah School *vice* Elliahumbie Pillai transferred to the Office of the Inspector of Schools, 4th Division.

V. Ponnambala Moodelliar, Assistant Master, Zillah School, Chittoor, to be Head Master, Taluk School Villapnam, on Rs. 40.

T. V. Sreenivasa Iyer, B.A., to be 10th Assistant Master, Provincial College, Combaconum *vice* S. Kistnasawmy Iyer resigned.

Mr. Hensman, to act as Head Master, Zillah School, Madura.

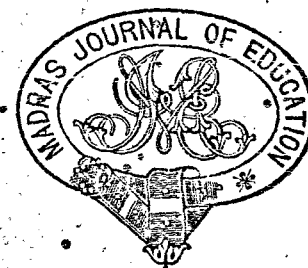
N. Vaithinathayya to revert to his original appointment at Combaconum.

T. Viswanatha Iyer, B.A., is appointed Assistant Master, Provincial School, Bellary, on Rs. 40 and Acting 2nd Master Zillah School, Karnool.

C. Subbamma to be Head Mistress Government Girls' School, Ossoor on Rs. 20.

\* The *Saddarsana Chintamita* published at Poona.

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#### THE MONTH.

We here give an analysis of the B. A. list recently issued.

| Institutions.             | 1st Class. | 2nd Class. | 3rd Class. | Total. |
|---------------------------|------------|------------|------------|--------|
| Presidency College        | 1          | 7          | 13         | 21     |
| Combaconum College        | ...        | 3          | 6          | 9      |
| Trivandrum College        | ...        | 1          | 3          | 4      |
| Madras Christian College  | ...        | ...        | 11         | 11     |
| S. P. G., Tanjore College | ...        | ...        | 1          | 1      |
| Dowton College            | ...        | ...        | 1          | 1      |
| Bangalore College         | ...        | ...        | 1          | 1      |
| Private Study             | ...        | ...        | 4          | 4      |
| Total                     | 4          | 11         | 40         | 52     |

The result must be considered very unsatisfactory, only 52 out of 150 candidates examined having succeeded in passing the ordeal. We fear that this result is in no small degree owing to the crochets of an individual Examiner, who is not in the position, to realize how discouraging it must be to heads of Colleges to find that candidates, whom they have carefully prepared, and who had most reasonable prospects of creditably passing the test should fail ignominiously. While we would have the test, a real test without partiality or favour, we would at the same time have strict justice published by caprice.

## UNIVERSITY OF MADRAS.

## THE B. A. RESULTS.

The following Candidates have passed the B.A. Degree Examination held in February 1878:—

## FIRST CLASS.

Venkataswami Naidu, Tanakondalu Rangaswami, Presidency College.

## SECOND CLASS.

Raman, Panagathan, Presidency College.  
Srinivasachari, Tirumalai, Presidency College.  
Srinivasa Rau, Mundkur, Presidency College.  
Chakrapani Rau, R. Provincial College, Kumbhakonam.  
Krishna Aiyar, Tondikulam Subramanya Pattar, Presidency College.  
Pranatarthana Aiyar, C. Provincial College, Kumbhakonam.  
Muttukumaraswami Pillai, T. Maharajah's College, Trivandram.  
Manavedan Raja, Kayaka Covilazam, Presidency College.  
Malhari Rau, S., Provincial College, Kumbhakonam.  
Ramakrishna Aiyar, Tarakad Appadurai Aiyar, Presidency College.  
Ramachandra Rau, C. V. Presidency College.

## THIRD CLASS.

Kailasam Petrai, M., Madras Christian College.  
LaBouchardière, Maurice Francis, Maharajah's College, Trivandram.  
Ramakrishna Aiyar, P., Maharajah's College, Trivandram.  
Subramanya Aiyar, Mosur, Madras Christian College.  
Seshagiri Rau, Pandit, Presidency College.  
Krishnasachari, Mandayam Asuri, Presidency College.  
Krishna Aiyar, Tarakad Vadam Pattar, Presidency College.  
Swaminatha Aiyar, S., S.P.G. High School, Tanjore.  
Srinivasachari, M., Provincial College, Kumbhakonam.  
Subbarau Nayudu, Makarla V., Presidency College.  
Viradra Mudali, Tiruppanakadu, Presidency College.  
Lyons, Robert William, Doveton College.  
Isvara Pillai, R., Maharajah's College, Trivandram.  
Sundaram Aiyar, Panayur, Provincial College, Kumbhakonam.  
Ramachandra Rau, Y., Provincial College, Kumbhakonam.  
Muttuswami Aiyar, V., Private Study.  
Krishnaswami Aiyanger, Sessa, Presidency College.  
Vaidyanatha Aiyar, Ragunatha Aiyar, Presidency College.  
Muttuswami Nallaiyappa Pillai, Mani, Madras Christian College.  
Sundaram Subramanya Aiyar, Parasurama Aiyar, Presidency College.  
Sundaram Aiyar, S. Madura, Presidency College.  
Venkataratnam Naidu, Madirachli, Presidency College.  
Punthen, Terratanathu Eapen, Madras Christian College.

Sankara Menon, Krishnai, Puttanvittil, Presidency College.  
Sahagopachari, Conjevaram, Madras Christian College.  
Dharmaswami Aiyar, R. Provincial College, Kumbhakonam.  
Arumswami Aiyar, A., Provincial College, Kumbhakonam.  
Renu, John, Madras Christian College.  
Rama Rao, Mudi, Presidency College.  
Krishnaswami, S., S.P.G. High School, Tanjore and Private Study.  
Srinivasa Rau, Trichinopoly, Presidency College.  
Raghunatha Rau, Reddamadapur, Central College, Bangalore.  
Manjesh, Han, Tellicherry, Private Study.  
Vasudeva Sastri, Vavilala, Private Study.  
Rama Rao, Subbramanyu, Madras Christian College.  
Subramanya Aiyar, K., Provincial College, Kumbhakonam.  
Appa Rao, Nilamraji, Madras Christian College.  
Gumiyar Nadas, Jesudasan Solomon, Madras Christian College.  
Kannakasabhai Pillai, Ambalavanar, Madras Christian College.  
Parthasarathi Aiyangar, Willianellore Ramappa, Madras Christian College.

We learn that St. Joseph's College, Negapatam, has recently been affiliated to the Madras University, and is authorized to prepare candidates up to the B. A. Standard. As this is the only Catholic Institution in the Presidency that prepares for the B. A. degree, the information will be both important and interesting to any intending candidates who happen to be Catholics.

By an oversight, we omitted from the list of schools distinguished for success in the Matriculation Examinations of past years, the Manargoodly Wesleyan High School. This school, which has been for several years under the able superintendence of Mr. J. Davies, has since 1867 passed no fewer than 66 candidates, 7 of whom have obtained places in the First Class.

In reply to numerous correspondents, we beg leave to state that the whole of the edition of the University Text Book published in English by the University is exhausted, and we believe that it is not the intention of the Syndicate to bring out a second edition.

A few copies of Part I. of the notes published as the Jeonair Supplement are still to be had from this office. Early application should be made, and names should also be registered for Part II, which will be published immediately.

## MADRAS UNIVERSITY.

## FIRST EXAMINATION IN ARTS—1877.

## SOLUTIONS IN ARITHMETIC.

(For the Questions, see page 65).

I. A obtains  $\frac{90}{100} = \frac{9}{10}$  of the minimum.B obtains  $\frac{89}{100}$  of A's marks.or  $\frac{800}{900}$  of  $\frac{9}{10}$  of the minimum.or  $\frac{8}{10}$  of the minimum.C obtains  $\frac{58\frac{1}{2}}{100}$  of (A's marks + B's marks).or  $\frac{117}{170}$  of ( $\frac{9}{10}$  minimum +  $\frac{8}{10}$  minimum).or  $\frac{10}{17}$  of  $\frac{9+8}{10}$  minimum.or  $\frac{10}{17}$  of  $\frac{17}{10}$  minimum.

or the minimum marks. Answer—C passes.

II. When wheat is dear,—

Price of 1 bushel is Rs. 5.

Cost of making it bread is R. 1.

1 bushel made into bread costs Rs. 6.

When wheat is cheap,—

1 bushel made into bread costs Rs. 3.

Cost of making it bread is R. 1.

∴ price of 1 bushel is Rs. 2. Answer—Rs. 2 per bushel.

III. L.C.M. of 1s. 2d., 30s.

or of 7 three-pence, 120 three-pence.

is  $7 \times 120$  three-pence.or  $7 \times 30s.$ or  $7 \times 3$ or  $\frac{7 \times 3}{1}$ 

or £101. Answer—£101.

IV. When 57 men work,—

1 man for 1 day receives Rs  $\frac{495 \text{ 3s. 9p.}}{57 \times 35}$ or Rs  $\frac{105\frac{1}{2}}{57 \times 35}$ or Rs  $\frac{25.935}{64 \times 57 \times 35}$ or Rs  $\frac{1}{13}$ or Rs  $\frac{3}{13}$ 

Cost of rice per measure is

When 70 men work,—

1 man for 1 day receives Rs  $\frac{353 \text{ 4s. 6p.}}{70 \times 19}$ or Rs  $\frac{353\frac{3}{4}}{70 \times 19}$ or Rs  $\frac{11.205}{32 \times 70 \times 19}$ or Rs  $\frac{17}{61}$ Rs  $\frac{17}{64}$  Rs  $\frac{39}{136}$  Rs : price per measure required.∴ price required is Rs  $\frac{17 \times 39 \times 64}{64 \times 136 \times 13}$ or Rs  $\frac{3}{2}$  or 6s. Answer—6s. per measure.V. (No. of men)<sup>2</sup> annas + (No. women)<sup>2</sup> pice = Rs 756.or Rs  $\frac{(\text{No. of men})^2}{16} + \text{Rs } \frac{4(\text{No. of men})^2}{19 \times 12} = \text{Rs } 756.$ or  $\frac{(\text{No. of men})^2}{16} + \frac{(\text{No. of men})^2}{12} = 756$ or  $3(\text{No. of men})^2 + 4(\text{No. of men})^2 = 16 \times 3 \times 756.$ or  $7(\text{No. of men})^2 = 16 \times 9 \times 252.$ or  $(\text{No. of men})^2 = 16 \times 9 \times 36.$ ∴ No. of men =  $4 \times 3 \times 6 = 72.$ 

No. of women = 288. Answer—72 men and 288 women.

VI. The area of the ground including the walk

is  $(56\frac{1}{2} + 8\frac{1}{2}) \times (30\frac{1}{2} + 8\frac{1}{2})$  s. ft.or  $65 \times 39$  s. ft.

or 2,535 s. ft.

The area of the ground excluding the walk

is  $56\frac{1}{2} \times 30\frac{1}{2}$  s. ft.or  $\frac{113 \times 61}{4}$  s. ft.or  $\frac{6.893}{4}$  s. ft.or 1,723 $\frac{1}{4}$  s. ft.∴ the area of the walk is  $(2,535 - 1,723\frac{1}{4})$  s. ft.Cost of making the walk  $811\frac{1}{4} \times 2$  s. ft.or  $\frac{3,247 \times 8}{4 \times 20 \times 3}$ or  $\frac{3,247}{30}$ 

or £108 4s. 8d. Answer—£108 4s. 8d.

VII. £27 in gold =  $\frac{27 \times 100}{90}$  £ (paper-money)

= £30 (paper-money)

= Sum offered.

Tm 211, MS

MS 9.20



Since 10 per cent. abatement is allowed for cash,

$$£27 \text{ (paper-money)} \times \frac{90}{100}$$

$$= £\frac{27 \times 9}{10} \text{ (paper-money)}$$

$$= £24\frac{3}{10} \text{ (paper-money)}$$

= Sum due from the buyer.

he must receive in change

$$£(30 - 24\frac{3}{10} \text{ (paper-money)})$$

$$= £5\frac{7}{10} \text{ (paper-money)}$$

or £5 14s. (paper-money).

Answer—£5 14s. (paper-money).

VIII. A's capital for 3 months + (A's capital -  $\frac{1}{3}$  B's capital) for 9 months

= 3 × A's capital for 1 month + (9 × A's capital - 3 × B's capital for 1 month)

= 3 A's capital for 1 month + (9 A's capital - 2 A's capital for 1 month)

= (3 A's capital + 7 A's capital) for 1 month

= 10 A's capital for 1 month

= A's investment.

B's capital for 6 months + B's capital +  $\frac{1}{3}$  B's capital) for 6 months

= 6 × B's capital for 1 month + 8 × B's capital for 1 month

= 14 B's capital for 1 month

=  $\frac{14 \times 2}{3}$  A's capital for 1 month

=  $9\frac{1}{3}$  A's capital for one month

= B's investment.

Now the profits vary as the capital.

$\therefore \frac{10 - 9\frac{1}{3}}{9\frac{1}{3}}$  of B's profits

or  $\frac{2 \times 3}{3 \times 28}$  of B's profits

or  $\frac{1}{14}$  B's profits = £110

$\therefore$  B's profits = £1,540 A's profits = £1,650.

Answer.—A's profits are £1,650, and B's £1,540.

IX.  $\frac{105}{100} \times \frac{105}{100} \times \frac{105}{100} \times \frac{105}{100}$  of the capital

or  $\frac{21 \times 21 \times 21 \times 21}{20 \times 20 \times 20 \times 20}$  of the capital = £1944.81

$\therefore$  the capital = £  $\frac{1,944.81 \times 20 \times 20 \times 20 \times 20}{100 \times 21 \times 21 \times 21 \times 21}$  = £1,600.

Answer.—£1,600.

X. When he spends £300 less,—he has at the end of the time

£1,197 + interest for the time

— (Interest for the time — £1,197.)

or £1,197 + £1,197

or £2,394. Answer.—£2,394

XI. £1,000 stock in the 3 per cents. is bought for  $£\frac{90 \times 1,000}{100}$   
= £900

£1,000 stock in the 3 per cents. is sold out for  $£\frac{91\frac{1}{2} \times 1,000}{100}$   
= £935

£935 invested in the 4 per cents. at par, gives an annual income of  $£\frac{4}{100} \times 935 = £37\frac{3}{5}$ .

Now £900 invested in the 3 per cents. at 90, gave an annual income of  $£\frac{3}{90} \times 900 = £30$ .

$\therefore$  by the investment of £900, his annual income is increased by  $£(37\frac{3}{5} - 30) = £7\frac{3}{5}$ .

We shall now find the sum of money invested which increased his annual income by  $(20. 5s., - £7\frac{3}{5}) = £1\frac{17}{20}$ .

By investing £30 in the 3 per cents. selling it out at  $84\frac{1}{2}$ , and investing the proceeds in the 4 per cent. at par, he gets an annual income of  $£\frac{4}{100} \times 34\frac{1}{2} = \frac{1}{25} \times \frac{337}{4} = £3\frac{37}{100}$ .

Now £90 invested in the 3 per cents. at 90, gave an annual income of £3.

$\therefore$  The annual income is increased by  $£(3\frac{37}{100} - 3)$  or by

$£\frac{37}{100}$  by the investment of £90.

$\therefore$  the annual income is increased by  $£1\frac{17}{20}$  by investing

$£\frac{90 \times 100 \times 37}{37 \times 20} = £450$

$\therefore$  the total sum invested is  $£(900 + 450) = £1,350$ .

Answer.—£1,350.

G. VENKATARAMAYA.

Tanjore S. P. G. High School.

## HORACE'S ODES, BOOK I.

ODE XXXV.

BY REV. G. U. POPE, D.D.,

Warden of the Bishop Cotton Schools and College, Bangalore.

FORTUNE was worshipped by the Romans, with various epithets. See Smith's dictionary. Her chief temples were at Antium and Praeneste. Antium is on a promontory 38 miles S. of Rome. (Porto d'Anzo.) Tacitus says the temple there was dedicated to *Fortuna Equestris*.

The ode contains a poetic statement of

- The ode contains a poetic statement of—
- I. Fortune's controul over the affairs and minds of men, (1—16);
  - II. Fortune's attendants (17—28);
  - III. Then follows a prayer for Augustus, (29—32);
  - IV. The evils are deplored which may compel Fortune to quit Rome, (33—40.)

The metre is *Alcaic*.

See Public S. Latin Gram., pp. 540, 541, 542, 543. "Bini Alcaiei Hendecasyllabi + Alcaicus enneasyllabus + Alcaicus decasyllabus."

The scheme is

1. 2.

3.

4.

The first syllable in 1, 2, 3, is called an *anacrusis*. The lines consist of *trochaic* and *dactylic dipodies*.

TO FORTUNE.

[*Alcaics.*]

1. O | goddess, ruling | beautiful Antium,  
Power | nigh to raise weak | bodies of mortal men.  
From | lowest depths ; and | haughty triumphs  
Turning to | funeral | gloom and wailing.
5. Poor rustic toilers, anxious importunate  
Thee seek imploring ; mistress of ocean, thee  
Whoever sails in bark Bithynian  
Billows of Carpathus' sea defying ;
9. Thee Dacian rule, thee wand'ring Scythian hordes,  
Thee cities, races, Latium fierce in war ;  
Thee queens who bore barbaric chiefs, and  
Tyrants fear in their purple vestments.
13. These tremble lest thou spurn with disdainful foot,  
The pillar stable deem'd of their state, and lest  
Mobs thronging rouse to arms, to arms  
Citizens tranquil, and break their empire.

17.    Thee ever stalks before cruel necessity,  
       Huge nails in brazen hand, and the wedges firm  
       She bears; nor rigid clamp, nor molten  
       Lead to her fast binding hand is wanting.
21.    Thee Hope attends, and Truth in her vest of white.  
       Rare guest on earth; nor shuns she thy company  
       When clad in mourning vest all sadly  
       Houses of the mighty thou quic'st estranged.
25.    But fickle hands of men and the wanton perjurd  
       Thy side forsake; they flee in the adverse hour,  
       The wine-jars drain'd, but dregs remaining;  
       Yoke of adfersity shun they faithless.
29.    Keep Caesar safe, departing to Britain's shores,  
       And furthest realms of earth; and the youthful band  
       Of Romans fear'd by eastern tyrants,  
       Fear'd by dwellers on red-sea borders.
33.    Ah! wounds and bloodshed, brothers in arms opposed,  
       For these we blush. Race harden'd in sin we shun  
       No crimes, no deeds of impious daring,  
       Nor hath the fear of the gods deterr'd us.
37.    What altars spares our youth in its mad career?  
       Oh! take our swords, now blunted in civil strife,  
       Reforge them, arm anew our legions  
       Arabs and Scythian hordes to vanquish.

A PLEA FOR THE TAMIL LANGUAGE.

(BY A TAMIL PANDIT).

OFFERING my respects to the Holy Seat of Mercy, I, a slave, humbly petition to the Great Holy Presence, that is honouring and ornamenting Tiruvavadāthurei.

Herewith have I sent to my Lord, what was for a long time revolving in my mind. I have adopted the *poetic style*, not because poetry is my element, but out of respect to the greatness of the Holy Presence. Hence my boldness, I hope, may easily be excused. An unreasonable aversion has, almost from my infancy, sprung in me with regard to the Tamil Dictionary after knowing that it was compiled by the Rev. Father Beschi, a European Christian, who assumed the title of Veeramamuni. Arranged alphabetically and containing all that is contained in *Tivakarum* and *Nikundu*, the (Tamil Metrical Dictionaries), it is most useful to beginners, as they easily find meanings for difficult words, met with in Tamil Poetry. It is 140 years old. It is very strange that one and all of the Tamil pundits, should have neglected to compile a dictionary of a superior kind and that Beschi's Book should have found permanency in the Tamil land. *Tivakarum* and *Nikundu*, productions of the Jains, not suiting the fast-learning-fashion now in vogue, Beschi's dictionary daily gains ground. However, shall I, who found at one time nothing in it to recommend it to me, like it now, because it is the fashion of the day to speak of it in better terms? Envy is no doubt blameworthy, but still I think it is a disgrace to all Tamilians to say that the Tamil language, has works of merit through the labours of a

foreigner. The cause of my aversion is that the Tamilians have taken no pains, to bring out standard literary works.

Winslow and Rottler, both Englishmen, have each compiled a Dictionary containing all the words now in use; but, intended as they are solely for Tamil learning Englishmen, the meanings of Tamil words are given but, in English. But if a Dictionary were compiled by our Tamil Pundits with the addition of provincial and colloquial terms, with the root of the word, its source, its Tamil form, its grammatical construction, its primary and secondary significations, should there be any such, with examples from standard authors, the different shades of meaning between words, if several express the same thing, and the history of the words, our language, I say, will then be on a firm footing. A universal satisfaction too will be felt by all Tamilians, to see a better Dictionary compiled by their own countrymen; while strangers too will have a great regard for and confidence in the work. Again as a book of this kind will not often be compiled, its author will be famous as long as the Tamil tongue lasts. Besides the monastery of Tiruvavaduthurai in general, and its head that superintends the work in particular, will also have great glory and honor for the undertaking and for its completion. It is needless to say that the Tamil student will ever think of the monastery with grateful remembrance. If the book is not compiled, it is then the misfortune of the Tamil world.

Though there is no lack of eminent Tamil pundits there is not even a single choice work in prose in the whole range of Tamil literature combining purity of style, and matters of interest to the readers that can attract attention and afford new pleasures even after repeated readings. There is, I say, none like a breastplate garnished with nine sorts of precious stones whose natural beauty is set off by the taste and skill of the workmen, who have so arranged the jewels, that the position of each sheds lustre on the others. Whatever you may chance to read in Tamil, it is in verse. And the majority of these verses are invariably crabbed and terse. There is hence a fear in taking a Tamil Book in hand to read, for the Poet being bound down by the rules of versification to conform to the rhyme, foot, &c., labours under difficulties to express himself as he would, and hence he is never rightly understood. There is a great deal of difference between the Tamil Bhagavad Gita, Prapothachandrothayam and such others, and their originals in Sanscrit.

It is sad that our eminent Tamil Pundits should pine away their lives without giving to the Tamil world suitable works that will at once transmit their names to posterity and add fame to the Tamil language, whose study may, thereby, be encouraged in these days, when so much attention is given to the study and spread of the language of the rulers. But who can cast the blame on the Pundits when none patronises them. And then our pundits know not the requirements of the day; to write a book fitting thereto; on the other hand, the modern generation could ill afford that time, which is necessary to a thorough study of the Tamil tongue as they have to direct their attention to that of English as well. Yet still, I do not hesitate even for a moment to say that, should our Pundits translate in chaste and pure idiomatic Tamil-prose style, some of the beautiful Sanscrit dramas, the writers, I am sure, will sufficiently be enriched. Among English writers there was Sir Walter Scott, who, drawing his materials from

the history of his own land, left many prose works, in each of which, heroic and pathetic characters are delineated and the history of some Kings thus presented. He lived to see his works pass through many editions. So immensely eager were people to read them. The publisher of these works now too, is enriched in no small degree. I learn that he derives an income of Rs 110,000 annually.

Lord Macaulay, brother-in-law of Sir Charles Trevelyan, Governor of Madras some 15 years ago, published 20,000 copies of the second volume of his History of England, and advertised, that copies might be had of such, at such price, and in such a street, on such a day, and on the day pointed out in the advertisement, all the copies were sold in less than 3 hours. The street was so full of people that it was not open to foot-passengers for the day. A second edition of the book, was an imperative necessity. He acquired unbounded wealth through his writings. Such an instance is a parallel among the Hindus. There was a Sanscrit Pundit in the Calcutta College on a monthly salary of Rs. 100. He gave it up for authorship in Bengali, which yielded him upwards of Rs. 5,000 a year. Is it right that this fame and honour should be denied to the Tamil Pundits? In truth, the more I think of this, the greater is my pain. And I am short of words to portray my feelings on the subject.

I need not say that the Tamil Matams, the very life and soul of the Tamilians will be blamed, if the Tamil language is not sufficiently cultivated in the Tamil country. I could never bring my mind to see other languages prosper in this Tamil land, and the Tamil languish. I have heard that no other language possesses such beauty as to the brevity of expression, the full and clear narration of ideas, the easy flow of harmonious words, and the sublimity of sentiments. It is a pity that no Tamil Pundit should venture to write in prose in illustration of the above position, similar to what Tiruvalluar has done in the Kural. What a misfortune it is that no Head of any Matam, the chief stays of the Tamil tongue, has not tried to do anything of the kind. Where, but before the Holy Presence shall I complain of this deficiency. My presumption in having written thus should be forbearingly overlooked. However the Holy Presence will clearly understand that my statement is nothing but truth. A few small books in prose are printed in Madras by some intelligent men sufficiently conversant with both English and Tamil. As the style of the majority of these is so like that of the English, they are not to be much admired. The abridgment of the Panchatantra by Thandavaroya Moodelliar and Vinotharasa Manjary by Astavathanam Veerasawmi Chettiar, are written in chaste and idiomatic Tamil. The Chettiar however, has either through want of time to search out truth, through want of materials, or through a desire to please the readers, written the lines of Kamban and others as his imagination suggested to him. Hence this work too is not entirely without its share of blame. Oh! what a great help would it be to those young gentlemen that place no faith in any religion after a course of English studies, if the principles of each of the three sects of Hindus, were reproduced in Tamil prose from the Sanscrit, in such a manner that the sense might be clear. Nay, such works will reclaim numbers of those, who through ignorance of religious principles have fallen before Madurai Veeran, Moonisvaran, and Chungheley

Karuppen taking them for God Almighty. Besides there are hosts of men that are simply in possession of religious mantras and do puja, &c., for hours together. When strangers attack their religion, they, ignorant of its true principles, are unable to give satisfactory answers, and become doubtful and sceptics. Even such will immensely be benefited. Should the heads of Matams fail to do this duty, whose then is it? Enough it is if the Holy Presence but undertake it. I entertain not the least doubt as to the successful termination of the affair. I hope to be excused for my presumptuous complaint to the Holy Presence, regarding the present unsettled state of the Tamil language and regarding the ignorance of the majority of the Tamilians in respect of their own religious principles.

The Tamil language is gradually declining. Those who cultivate it now a days are comparatively few. The Tamil gentry and others, learning English, communicate with each other in English alone, though with ten thousand blunders. Whenever they discourse, they always do so in English, though they possess no proficiency in that language, still they are all very proud of discoursing in English. If any occasion makes it necessary to converse in Tamil, they mingle the English to a great degree with the Tamil and thus spoil the beauty of the Tamil language. They without any consideration, boldly and freely use words, knowing not either the appropriateness or inappropriateness of them in their proper places. They think it very grand to talk in English, but they consider it no disgrace not to be able to converse in Tamil. Although there is no objection to using official and technical terms, still on consideration, it seems ridiculous, to write and speak the Tamil language needlessly mingling the English with it. Alas! they do not in the least feel it a great mistake and very mean indeed not to be able to express their thoughts nor to write them in their own mother tongue. None but Tamil pundits know how to write Tamil words correctly from the mere utterance of the words themselves. What a shameful thing is this? What can they do? They have never read in Tamil, intelligence of the different ages and climes, nor is any such published at all. What a lamentable occurrence it is, that those who ought to patronise Tamil should neglect their sacred duty. If the Hindus were to take in Tamil

16000 of the interest, which the Mahomedans and English respectively have done in their languages, no doubt the Tamil would regain its supremacy. A zemindar, who well knows the English language told me once that he was teaching his partner in life the same language, and when he saw me smile at this, he asked me, if it were possible to know the manners and customs, and the general news of the world through the medium of the vernaculars of this country. I confess it is a fact that our pundits never write on matters of such interest in the vernaculars. Under these circumstances, it is absolutely necessary that Tamil heads of Matams and other wealthy gentlemen, who know well the Tamil language should try their best to maintain its superiority and progress.

Even the encouragement which the Tamil language has received from the Government now seems to become less. All classes of people have a great regard for Sanscrit as it is the mother of many languages. Such an excellent language as Sanscrit being called the language of the Hindus, is a matter of great repute to all. The

excellence which Sanscrit possesses really belongs to us, but as there are very few who patronise the Tamil language which has lost its value in the estimation of the public, it seems really distressing that although the whole of southern India belongs to the Tamil section, still the language is rarely cultivated. It is well that the study of the Sanscrit language should be revived. But to hear that Tamil will give up the place of excellence to Sanscrit is repugnant to people born Tamilians like myself; no matter what the language may be, it is sad that it should be revived at the cost of Tamil. Foremost among the bold champions for Tamil should be placed Arumuga Navalar. Although Mceenatchi Sundram Pillai may be termed the incarnation of the Minerva of Tamil, still he has never made any prose works up to this time. His scholar Chodasavathanum Soobroya Chettiar has published Pathinoranthrumurai and Tholkappium. I don't know, when the services of the well learned and skilful Tamil scholar Teyagaraya Chettiar will be given to the public. The other pundits attribute to men, qualities and skill, which they possess not, and cringe to and flatter rich patrons not knowing that they have a sufficient field to immortalize their names by improving Tamil prose. It is the duty of the heads of Matams to patronise and ennoble the Tamil. There are none at present to publish the old Tamil sciences of Soobramaniam and Agastiyar. How then can there be readers without books?

#### UNIVERSITY OF BOMBAY.

MATRICULATION EXAMINATION, 1877-78.

MONDAY, 1ST OCTOBER. [10-30 A.M. TO 1-30 P.M.]

#### ENGLISH.

[The Black figures to the right indicate full marks.]

 N.B.—Questions 1, 2, 3, and 4 must be answered by every candidate.

1. Paraphrase, punctuating with care:— 30  
 How weak is man to Reason's judging eye!  
 Born in this moment, in the next we die;  
 Part mortal clay, and part ethereal fire,  
 Too proud to creep, too humble to aspire.  
 In vain our plans of happiness we raise,  
 Pain is our lot, and patience is our praise:  
 Wealth, lineage, honours, conquest; or a throne,  
 Are what the wise would fear to call their own.  
 Health is at best a vain precarious thing,  
 And fair-fac'd youth is ever on the wing;  
 'Tis like the stream beside whose wat'ry bed  
 Some blooming plant exalts his flow'ry head  
 Nurs'd by the wave the spreading branches rise,  
 Shade all the ground and flourish to the skies!  
 The waves the while beneath in secret flow,  
 And undermine the hollow bank below;  
 Wide and more wide the waters urge their way,  
 Bare all the roots, and on the fibres prey,  
 Too late the plant bewails his foolish pride,  
 And sinks, untimely, in the whelming tide.

2. Paraphrase the following idiomatic expressions so as to 20 show that you understand their precise meaning:—

- (a) You had better now have your wits about you.
- (b) The question is whether the rule holds good in this case.
- (c) Pray do not beat about the bush, but come to the point at once.
- (d) It may be true for aught I know.
- (e) You may take my word for it that this cannot be put up with.\*

3. Point out what is wrong in the following sentences, and 20 re-write them correctly:—

- (a) I asked to him that what harm is there if we will copy.
- (b) That province feels scarcity of corns, and rice has risen to such enormous price as the poorer men are obliged to eat breads of grass.
- (c) I was wondered to see a fainted man in the street with his legs stretched; it was dreadful sight.
- (d) We have had a strong weather since two days, attended with thunders and lightning having forks.
- (e) The trees now display a pleasing scenery, being clean by reason of rain-showers, and the people are too much happy.

4. Write about 15 lines of original composition, in the form 20 of a letter to a friend, stating what profession or occupation you would prefer to follow, and your reason for preferring it.

5. Write down the following grammatical forms:— 10

- (a) The comparative and superlative of:—  
bad, thin, holy, wise, perfect.
- (b) The diminutive of:—  
hill, stream, dear, maid, lamb,
- (c) The plural of —  
leaf, index, canto, penny, brother-in-law.
- (d) The past tense and past part. of:—  
drink, shoot, lie, cleave, hang.

6. What is meant by the sequence of tenses? State and ex- 10-  
emplify the rule on the subject. Criticize the sequence in the following couplet:—

Friend to my life, which did you not prolong  
The world had wanted many an idle song.

7. Parse fully the word *sleeping* in the following sentences:— 10

- (1) Now sleeping flocks on their soft fleeces lie.
- (2) Then gave I her a sleeping potion.
- (3) 'Tis given out that sleeping in my orchard a serpent stung me.

(4) You ever have wished the sleeping of this business.  
Write four sentences in which the word *stock* is used respectively as a verb, a noun, an adjective, and an adverb; and three sentences in which the word *after* is used respectively as an adverb, a preposition, and a conjunction.

8. Apply your knowledge of etymology to distinguish between an arrogant, an insolent, an impudent, an impertinent, a rude, and a saucy person. 10

Give the roots and primary meanings.

Re-write the following sentence of Dr. Johnson's, using chiefly words of Teutonic origin:—

"The connection is supplied with great perspicuity, and the thoughts are concatenated without any abruption."

9. What is a subordinate sentence? How may they be 10 classified? Give an example of each class. Distinguish between the different kinds of adverbial sentence.

10. Distinguish between rhythm and rhyme. 10 " Explain the terms 'accent,' 'emphasis,' 'blank verse,' 'hypermetrical,' 'pentameter,' giving examples.

"O argument, blasphemous, false and proud."—Milton.  
Scan this line and comment upon anything noteworthy.

*Note on the above paper.\**

The following note is written in the belief that both schoolmasters and candidates may be interested to learn something of the actual character of the answers written in the late examination.

No. I. The paraphrase was generally, but not in all cases, attempted, but line 11 was, with few exceptions, misunderstood. Many candidates thought "youth" was like the stream, many thought it was "man," some that it was "health." The comparison is somewhat obscure, but the poet is clearly thinking of the course of man's life, and not of any one part of it. Many candidates wrote pure nonsense as their version of line 10, and stated boldly that beautiful youths often fly about on wings, though this phenomenon can never have been observed by them. Students in this country are apt to write and speak as if the world of books were wholly distinct from the world in which they daily live, and seldom allow their common sense to influence them in deciding the meaning of an author whose book they are studying. I have known even candidates for the B.A. degree paraphrase a passage so that the author is represented as making assertions obviously absurd, as when the senator in *Othello* says of his letters that

"—Though they jump not on a first account,  
—yet they do all confirm," &c.

the first line was paraphrased "Though they do not skip upon a correct ledger." The candidate who wrote this may not have understood the original line, but, however that might have been he must have known that Shakespeare could not have intended to write absolute nonsense, and he must also have known that his paraphrase was nothing less than absolute nonsense. Boys should be taught that no answer at all is better than writing such stuff.

Question 2 was fairly well answered by most candidates, but (a) was by several rendered thus: "You should now be on your senses;" Native students should beware of this mistake.

\* This instructive note has been very kindly placed at our service by one of the examiners, who, as he explains, speaks for himself only. We believe, however, that the observations in the note would be very generally adopted by the other examiners; difference would probably be in very minor points only. We think that the candidates who thought it was the flight of youth that was like the stream could say a good deal for their belief.—ED. *Bombay Educational Record.*

- (b) "The rule holds good" was by many explained—The rule "is favourable."  
 (c) "Beat about the bush" was by many taken literally—another instance of the habit before noticed, of writing without reference to common sense. Did any native boy ever see a man go into the jungle and beat the bushes in order to avoid giving a direct answer?

## Question 3.

- (a) Most candidates corrected the mistake of using "to" and "that," but the most correct wrote "I asked him what harm there is if we would copy." Not one native student wrote "I asked him what harm there was if I copied," still less did any give the sentence in its most idiomatic form, "I asked him what was the harm of copying."  
 (b) Many candidates objected to "feels" because a province is not an animate being. Very few knew that "breads" was wrong.  
 (d) Hardly any candidates corrected this; nearly all used the article with "weather," and none knew the phrase "forked lightning."

Question 4 was generally well answered, considering the age of the candidates, the most common mistake being the use of "an employment" in such phrases as "My poor circumstances compel me to seek an employment," where an Englishman would rather say "My poverty compels me to go out into the world," or "oblige me to look for some work to earn my living."

Question 5 was also well answered, but "thiner," "Thinest," were often given as comp. and superl. of "thin."

Question 6. Hardly a single candidate attempted the couplet.

Question 8 was seldom attempted. Where it was attempted, the candidate showed that etymology, as he had learnt it, had been a waste of time. Boys who knew no Latin would write "arrogant from *ad*, to, *rogo*, to ask,—hence impudent." If a boy is taught the derivation of this word, and it is explained that it etymologically means one who demands for himself more than he is entitled to, the boy has learnt something worth knowing, even if he forgets or never heard the individual words from which "arrogant" comes. It is a matter of opinion whether there is any use in teaching boys ignorant of Latin and Greek the verbal etymology of words derived from those languages, but it is quite certain that such teaching is useless when the boys do not learn how to connect this etymology with the existing meaning of words. Tell a boy that "impertinent" means literally "not pertaining to"—the subject in hand, the occasion, &c., and thence explain how it comes to mean in any sense "rude." If this is done in an intelligent manner, the boy has learnt something, and his mind has been exercised; but let him learn from some manual, or be told by a master, that "impertinent comes from *im*, not, and *pertinere*, to belong to," the boy has wasted his time, and exercised nothing but his memory.

Questions 9 and 10 were generally well answered except the last part of 10, which was seldom attempted.

Before closing these remarks, I would add: first, that they apply directly only to those answers which I was personally most concerned with, though probably they are applicable to the rest. Second,

that some candidates sent in papers to which a mere nominal value could be assigned, and some to which absolutely no marks at all could be given.

## LORD LYTTON ON EDUCATION.

The annual distribution of prizes to the successful students of St. Xavier's College, Calcutta, took place on the 11th December in the large hall of the Institution, with more than usual *décor*, owing to the presence of their Excellencies Lord and Lady Lytton. A light Comedy in three Acts opened the proceedings, the plot of which was as follows:—The young actors went through their different parts very creditably, and during the intervals between the Acts the College Band played several lively airs. After the play, His Excellency distributed the prizes to the Boys of the Senior Department. The distribution over, an address was read to His Excellency by one of the Senior pupils.

The Viceroy having received the address from the Reverend Rector, spoke in the following terms:—Reverend Sir, Professors, Students, and Pupils of St. Xavier's College—On Lady Lytton's behalf as well as my own, I thank you cordially for your kind address. You rightly surmise that my visit to this Institution was regarded by me as a duty; but that duty has been. I assure you, a very agreeable one; and in the willing fulfilment of it, I have more than realized the pleasurable anticipations with which I accepted your invitations to distribute the Prizes to-day. Allow me to congratulate the Reverend Rector on the intelligence evinced by his pupils in the Dramatic exercise we have just witnessed and enjoyed. I trust that, eventually, they and their companions will take their places, and play their parts upon the larger stage of human life with equal confidence, good humour, and success. There are two statements in the prospectus of this institution which I have noticed with peculiar satisfaction. Wisely recognizing the essential distinction between learning and education and the futility of the former if dissociated from the latter, you state that it is your paramount object "to form the character of your pupils, to inspire them with a love for religion and morality, and to accustom them to gentleman-like manners."

Now, it so happens that a great part of my own life, and perhaps, the pleasantest part of it, has been passed in the companionship of books I should, therefore, be ungrateful if I depreciated the worth of those treasures of thought, which the old Egyptians not inappropriately called, "the depositories or the consolations of the soul." But I cannot too strongly impress upon my young friends here the soundness of the salutary distinction maintained by their teachers between education, properly so called, and mere book learning. Book-learning is indeed, at best a small part of true education. It may supplement and adorn but it can never supply what ought to be the object of all sound education—they had but supineness and usefulness of human life—as guaranteed by the nobleness and purity of human character. Even if you regard success in the world from the lowest and most self-interested point of view, still it is to the exercise of faculties which are not those of the intellect that you must look

for the attainment of it. It was the disappointed saying of a wise man that the world is governed by very little wisdom. But he who said this unconsciously bore witness to a great consolatory truth. Happily for the world those qualities which best enable men to govern others are the qualities they must most constantly exercise in the government of themselves; and these are not intellectual but moral qualities. Reason, no doubt, is a power; and therefore you do well to cultivate betimes the right exercise of that power. But, like all human powers, Reason has her toadies and flatterers. Religion and Morality are her best friends, and those are her worst foes who seek to persuade her that she is superior to their authority, or can safely dispense with their guidance. I dare say you, young gentlemen, have all read the History of France. If so, you will remember that in one of its fits of unreason, the French nation proclaimed Reason to be a goddess, and worshipped her as such. But no sooner was Reason proclaimed a goddess, than she began to behave like a lunatic; and having fitted her worshippers for the madhouse, she conducted them all to the shambles. Again, amongst the educational objects of this Institution, your prospectus specially mentions "gentlemanlike manners." I presume, Reverend Sir, that the "gentlemanlike manners" thus referred to, are those gentle habits of thought, speech, and conduct which sweeten and elevate both individual character and social intercourse. If so I cordially appreciate the special importance you wisely attach to them. Neither birth nor wealth nor learning nor royal favor can make a gentleman. Christian education can. It is in this sense that the permanent character of every society depends more on those who form its manners than on those who make its laws: for manners are stronger than laws. It was well pointed out by Aristotle that, in any conflict between laws and manners, manners eventually prevail. And indeed, if our manners be mean, and sordid, or violent, impure, and coarse, then all our laws can be at best but frail political cages for the casual repression of wild beasts. In witnessing the clever dramatic performance with which we have been entertained this afternoon, it occurred to me that the old analogy between the theatre and the world, which Shakespeare epitomised in the assertion that

"All the worlds a stage,  
And all the men and women merely players,"

suggests good ground for believing that dramatic exercise such as this have an educational value quite apart from the recreation they afford. For what are the conditions essential to the successful performance of a Play? First discipline on the part of all concerned in it, each must take the part, and speak the word assigned him; but no more. This in itself, however, involves the vigilant exercise of many other moral qualities—such, for instance, as the suppression of vanity, and self-seeking. The avoidance of all striving after false and illegitimate effect—recognition of collective as superior to personal interest—due respect for the parts played by others,—and above all, reverential study of the Dramatist's general design. But is it not so in life? What is the common characteristic of a bad actor? That he thinks only of his own part to the whole purpose of the Play. What is the highest praise we can bestow upon a good one? That he has carefully studied, and rightly understood, the

general intention of the author; that he has followed it as a law of art superior to his own whims and impulses; and that, in his endeavour to make it manifest to others, he has neither under-acted nor over-acted his proper part in it. So in the great drama of human life where to each a different part has been assigned. Best and happiest are they who know how to respect the parts allotted to others, whilst honestly performing their own in willing harmony with the beneficent purpose of its divine author. Young friends the highest prizes you have now the opportunity of acquiring, it is not in my power to give you; for these are modesty and manliness, reverence, and self-respect. But if you carry them with you from St. Xavier's College, no man can afterwards take them from you, and whatever be your lot in after life, you will always have cause to bless the education here received from those wise and kindly teachers, to whose good wishes for your future welfare most heartily I add my own.—Englishman.

## ARITHMETIC AND HISTORY

By the Rev. R. H. QUICK.

I COME now to a study which is pursued in every school in Europe, a study to which much time is given on account of its real or supposed utility, and which should have besides a great educational value, being, as Plato says, one of the studies "in which the eye of the soul is purged" (7th bk. of Republic)—I mean Arithmetic.

Notwithstanding the importance usually attached to this subject, the amount of time bestowed upon it and the early age at which it is begun, the number of failures in it is notoriously large. I have been told by head-masters of public schools that boys come to them at the age of twelve or fourteen having been *all through arithmetic* but quite unable to answer the simplest questions in it. One master of great experience tells me that he seldom finds a boy who on coming to him in this advanced stage of learning gives a right answer to the question—Which is greater, 1-10th or 1-11th? So much for the secondary schools. Things are probably better in the primary schools, but when I examined some of the best boys in Liverpool for a scholarship, I found that most of the boys had been taught too much in a groove. *E.g.*, they could work sums in "L. C. M." or "G. C. M." but they did not know the meaning of the words *multiple* and *measure*. When I asked them to name a multiple of seven, they looked dumb-founded. One poor boy vaguely seeking a clue to bring him into the beaten track asked feebly, "Do you mean a common multiple, sir?" These boys were good at the art of arithmetic, but their intelligence had not been trained by investigation in the science.

Let us see what we want. We want our pupils to get (1st) the power of manipulating numerical quantities *correctly* (which is the main thing) and rapidly, *i.e.*, easily, in their heads; (2nd) the power of putting these results neatly and rapidly on paper. When these powers are acquired in Addition, Subtraction, Multiplication, and Division, everything else can soon be added as far as the *art* is concerned. Next, for the science we want all the operations to be performed intelligently.

In considering this subject the same objection meets us on the threshold as in the case of learning by heart. The objector says,

You want to cultivate the children's intelligence by getting them to understand figures. This attempt to get them to understand when they begin, is a mere waste of time. They can't understand, but they can work mechanically. Teach them to work by rule and the understanding will come in due course. To this I reply, children cannot understand everything about figures, but that is a poor reason for not requiring them to understand anything. It may not be possible to make beginners understand Long Division, but this is no reason why they should not understand Addition and Subtraction. The great mischief is in most cases that children begin in the wrong way. Before they can conceive of more than a hundred things they are taught notation and made to write down millions. In my belief it is a mistake to let beginners do anything with pen or pencil except writing columns of figures very carefully for neatness. Every process should be done in the head till it is done readily. The plan of putting children down to "do sums" gets them into bad habits at once. When they have to determine what  $9-4$  is they save themselves the trouble of thinking by putting down nine dots, rubbing out four, and then counting the remainder. They should have therefore no written arithmetic till by constant *viva voce* practice they can readily add and subtract. In the German schools all the early operations are made clear by means of actual things. I have no doubt this is the best foundation for arithmetical knowledge, but I have not yet determined whether it is indispensable. Certain it is that from the very first one may ask questions about things, and these will be much better for the children than abstract questions. *E.g.*, one may ask, "How many chairs are there in the room?" If the answer be 12, the master may say, "If only one person could sit on each chair and there were ten people in the room, all sitting, how many chairs would be empty?" Now if five people more came in, how many of them would have to stand?" and so forth. The great beauty of arithmetic for teaching purposes is that the number of questions which readily suggest themselves is infinite.\* It is usual to form "trains" from the very first, such as the Multiplication table, and first or last such trains must be formed, for the art of arithmetic depends on these associations being properly established. James Mill takes Addition as his instance of "association" and I will quote his words, as arithmetic gains vastly in interest if we observe the mental operations it involves. He says: "All men whose practice is not great find the addition of a long column of numbers tedious, and the accuracy of the operation by no means certain. Till a man has had considerable practice, there are few acts of the mind more tedious. The reason is, the names of the numbers which correspond to the different steps do not readily occur; that is, are not strongly associated with the names which precede them. Thus 7 added to 5 makes 12, but the antecedent  $7+5$  is not strongly associated with the consequent 12 in the mind of the calculator, and he has to wait and search till the name occurs to him. \* \* \* If the practice of the performer has been small, the association in each instance is imperfect and the process is irksome and slow. Practice however, i.e., frequency of repetition, makes the association between

\* The kind of questions suitable for children may be seen in Horace Grant's *Arithmetic for Children*. (Bell & Sons.)

each of the antecedents and its proper consequent so perfect that no sooner is the one conceived than the other is conceived likewise."—[James Mill's *Analysis*, edited by J. S. M., p. 90.] Now the art of arithmetic depends mainly on having these associations firmly established in the mind. Most teachers perceive this about Multiplication and are not satisfied till "9 eights" at once suggests 72, but they are more careless about the short trains or associations which enable us to do Addition, Subtraction, and Division.

Another thing has tended to spoil our young arithmeticians. Mental arithmetic is conceived of as something quite different from written arithmetic. Advanced pupils are sometimes introduced to this difficult art and made to bewilder strangers by telling the price of any number of dozens of articles at any rate you like. Mental arithmetic in this sense would be most useful in any community where writing materials were rarities, but this is by no means the case with us; and feats of this kind are like one-handed piano-playing. I have heard some very extraordinary playing with one hand, but I could not help wishing that the performer would take two hands and play still better. This conception of mental arithmetic is indeed a very absurd one. The truth is that a great part of the process in all arithmetic, except arithmetic with the fingers or by making and rubbing out dots, should come under the head of mental arithmetic, and as the necessary associations can be firmly established only through an immense deal of practice, it is far better that they should be made strong by *viva voce* practice, preceding written arithmetic. Dr. Morgan recommended the formation of long trains such as counting upwards and then downwards by a constant difference, first 1, then 2, then 3, &c., taking different starting points, *e.g.*, in going up by three the pupils say first "3, 6, 9, &c.," then "1, 4, 7, &c.," then "2, 5, 8, &c." Very good class practice may thus be got if each boy gives a number smartly.

As I attach great importance to constant *viva voce* practice as a preparation for written arithmetic and as an exercise to be continued after written arithmetic has been begun, indeed to the end of the course, I will mention the way in which a class may be kept alive. We will suppose the learners to have passed through the stage when it is necessary to speak of things, not abstract numbers. (This stage is indeed not recognized in this country, but it is made much of by the Germans who are better authorities on such matters than we are. But I will suppose now that we can use abstract numbers. The master faces his class which is arranged for place taking. In his hand is a good long pointer. He may first make the boys count upwards or downwards by a constant difference in the manner I have mentioned. He lets his pointer travel on as the boys give the numbers, and if a pause occurs the pointer goes on till the right number is given. If a wrong number is given he takes no notice but goes on till a correction comes from some boy below. After a few rounds of this he changes the exercise. He now may fix a number, say 17, and then give numbers to add or subtract. He says, "plus 5," and after speaking he directs his pointer to the boy he selects for the answerer. If the 22 is not instantly given the pointer travels on. He goes on briskly with such questions as " $+7$ ," " $+4$ ," " $-3$ ," " $-8$ ," &c., &c. Another practice is to add each number named by the master to the sum of the numbers previously given. When the



pupils get accurate and sharp in adding the digits, a good exercise for the eye may be obtained as follows:—Dictate a block of figures which the pupils must take down very neatly on paper. Let the rows of figures going from top to bottom of the paper be marked A, B, C, D, &c., and the rows going from side to side of the paper marked i, ii, iii, &c., in Roman numbers. The master has a similar paper, and he will do well to mark the sums of the several columns on his own paper, though of course there must be nothing of the kind marked on those of the boys. The master then asks for the sum of the figures in D, or in iv. or v., or in  $C \times B$ , in no case naming the answerer till he thinks the boys have had time to add up the column. I said the master should have his paper marked. Later on he should use a book like Henry Hopkins' *Teacher's Manual* (Simpkin and Marshall), giving a great number of questions with the answers. Masters who are ready reckoners themselves may scorn such helps, but I think most will find them almost necessary, and that for two reasons—first, in case the master himself makes a mistake a very awkward altercation may ensue, or the sharper boys will feel that a place has been lost and won unfairly; secondly, the master ought to be able to concentrate all his thoughts on the boys, and not to be obliged to keep any figures in his head.

But I can fancy an experienced teacher raising two objections to these exercises. He will say, "If you get your boys to attempt all the questions this will be very hard work for them, and they will soon be exhausted; and besides, I doubt if you will get any but the best boys to attempt to answer. The boys who find they are not in time with their answers will soon give up trying and will merely sit idle."

That the work is hard work I must admit, and it should therefore not be continued for more than a quarter of an hour or twenty minutes at a time; but after a great deal of experience I can testify that it is work which most boys take to very kindly. As to the other objection, I do find occasionally a boy or possibly two or three boys who are so much behind the rest that they cease to attend. If the master suspects this he asks a very easy question indeed and then names the boy who is not attending, if the boy fails to answer he raises a laugh against himself.

But the best way of preventing stagnation is the following:—At the end of the first half of the lesson, or at the end of each lesson, if the lessons are short, the marks are taken, and then the order of the boys is completely reversed. The boy at the top goes to the bottom, the boy next below him now becomes the next boy above him, and so on. The marks of the two halves of the lesson, or of the pair of lessons, when added together are the measure of each boy's success. This change of order wakes everybody up. The boys who were lately at the bottom will, on finding themselves at the top, exert themselves to keep there; and I have sometimes known a boy wake up in such a position and parry all the thrusts of the master most successfully. Many have been the exclamations of surprise when I have mentioned this way of marking, and many complaints have I heard of its unfairness, but these complaints have not come from the boys, who find that it is perfectly fair. It is fair I say in this subject and in any subject where a great number of questions are asked, and where good boys who begin low down are sure of a chance of getting up. The ordinary plan of letting the boys begin in order of merit

is an extremely bad one, for it gives a great advantage to the boys who least want it, and renders competition with them hopeless. It is an elaborate system of handicapping in which the worse a horse is the more he has to carry. In such competitions we need not wonder if there are few *bona fide* entries.

By such exercises as I have mentioned I should wish my pupils to learn to add and subtract correctly and rapidly. Exercises in Addition should never be discontinued, but we may soon give part of each lesson to Multiplication and Division. All teachers are as I said agreed about the necessity of knowing the Multiplication table thoroughly, but here as elsewhere many teachers work too much in a groove. The learner should say the two tables briskly upwards and downwards. When he has learnt it in the form  $2 \times 1 = 2$ ,  $2 \times 2 = 4$ ,  $2 \times 3 = 6$ , he should also learn it in the form  $2 \times 2 = 4$ ,  $3 \times 2 = 6$ ,  $4 \times 2 = 8$ , &c. He may also learn it as doubles, the double of 1 is 2, &c.; and as halves, the half of 2 is 1, the half of 4 is 2, &c. These different ways give the teacher a great choice of questions even in the two line only. He may give numbers and require their doubles; then he may give numbers and require their halves. Then he may give three numbers, say 6, 2, 5, and require the product of the first two figures with the 5 added to it.

But I am going into unnecessary detail. Any teacher who will think out this matter for himself may find a great variety of such exercises. The only caution I would give is not to make the questions difficult; a great deal of time is spent on a difficult question, and in this time a number of easy questions might have been answered, and the easy questions are the main things for learners.

I cannot pass from Multiplications without pointing out the importance of making the learner from the very first regard each number as a prime number or as a multiple of its factors. He will with a little practice be able to run up the numbers as follows:—"1 prime, 2 prime, 3 prime,  $4 = 2 \times 2$ , 5 prime,  $6 = 2 \times 3$ , 7 prime,  $8 = 2 \times 4$ ,  $9 = 3 \times 3$ ,  $10 = 2 \times 5$ , 11 prime,  $12 = 2 \times 3 \times 2$ , &c." This table however should be learnt by the intellectual memory not the sensational.

A few minutes in every lesson should be given to questions on the meaning of arithmetical expressions. This is of more consequence than might at first appear. It is of small importance acquiring a technical terminology if we have the ideas or if we can do without the ideas; but in this case the ideas are necessary, and although pupils often have the words in their heads without the ideas, it is extremely unlikely that they will have the ideas without the words. When the words are properly understood they must be made familiar by constant use in *vis à vis* questions. By the plan of constant *vis à vis* some insight may be gained into the science of arithmetic, and the understanding of the pupils may be exercised about all the principal conceptions. The great point is not to give conceptions too fast, but to make those given thoroughly familiar by use before advancing to fresh. This is especially the case with fractions. As Mr. Lake has well said, every mind which understands the multiplication of fractions must have passed through certain stages. It is the teacher's duty to analyse the process, to know precisely what the stages are, to guide the mind of the pupil along them and to make him familiar with each before allowing him to attempt further ad-

vance. Now it takes a long time to naturalize the conception of a fraction, and I think the conception should be given long before "fractions," so called, are begun. I pointed out just now that the Multiplication tables may be turned into Division tables by saying it thus:  $\frac{1}{3}$  of 3 = 1,  $\frac{1}{4}$  of 6 = 2,  $\frac{1}{5}$  of 9 = 3, &c. When the pupils understand this thoroughly they may get a notion of the  $\frac{1}{2}$  of 1. Lines of equal length may be drawn on the black board and these being the units may be divided in such a way as to show the meaning of a proper fraction. The pupils may then fold sheets of paper for themselves. The notion of a proper fraction having been acquired (or rather extended, for every child will know what a half is and what a quarter is) there will be no difficulty in getting at say the  $\frac{1}{2}$  of 28 and then of 29. In this way thirds and fifths, &c., may become as familiar as halves and quarters are now.

In written arithmetic the great thing to be insisted on is clearness and neatness of work. Very often the master merely glances at the answer and does not look to see whether the different steps are clearly indicated. The use of slates and scraps of slate pencil by beginners has a very bad effect on neatness. All the smaller operations are scribbled down in a corner and rubbed out before the work is shown up. Even the number carried is carried on the slate instead of in the head, and in this way continuous attention becomes unnecessary. As I have said, I do not think beginners should have any written sums at all, but should write figures with a view to acquiring neatness. Paper and if possible pen and ink should be used from the first.

When boys after some years of arithmetic ascend to algebra they meet with all sorts of difficulties arrayed in phalanx. They make very little way in consequence, and the most successful school algebra is often nothing but the art of manipulating letters according to seemingly arbitrary rules. But if arithmetic has been taught intelligently the only new notion to acquire on the threshold of algebra will be a new means of generalizing. The pupil will be quite familiar with factors, multiples, powers, indices and even with the nature of a negative quantity and the effect of subtracting it or multiplying by it. He will also have had a good deal of practice in the use of brackets, and letters themselves need not be quite strange to him; he may have long stood for the number he is in quest of, and he may have found the advantage of "a's" and "b's" in general statements. The only result of keeping up such a rigid distinction between arithmetic and algebra is that neither of them is properly understood.

I have perhaps now confused you with my details. But I hope you will at least remember, if you do not follow, my advice, which I will put briefly thus:

1. Have a great deal of *vidvā* arithmetic, and with beginners nothing but *vidvā* arithmetic.
2. The subject of the *vidvā* must be the thinking out of principles, the exact meaning of arithmetical words, and lastly and chiefly an endless variety of easy practice in the four rules.
3. The practice must be conducted very briskly, and if possible with place-taking such as I have described.
4. The necessary "trains" should be formed by learning tables

not only for multiplication but also for the other three rules and there should be endless sharp questioning and dodging in these tables to secure perfection in the short "trains."

5. The master must always, except in the case of tables or when teaching the merest beginners, have both the questions and answers in his hand.
6. The boys must be accustomed to factorize numbers and must understand powers and indices.
7. There must be no rigid line drawn between arithmetic and algebra, but great care must be taken not to give new conceptions before the old are thoroughly familiarized by practice.
8. In written arithmetic papers and where possible, ink must be used from the first, and great attention must be paid to clearness of statement and to neatness.

## MAHRATTA SCHOOLS AND SCHOOLMASTERS.

By A HINDU.

THE birth of a son is hailed by the Hindu father with ecstasy. He is loud in the praises of the Gods, his house resounds with music and the noisy congratulations of a crowd of relatives, to whom and to the priest he liberally distributes sweetmeats and rich presents.

The Shastras provide most favourably for sons. They must be nurtured from infancy with the greatest care and affection, and be instructed in science and religion, so as to be fitted for society when of age. Every Hindu father therefore considers it a solemn duty to have his son taught to read, to write, and to cast accounts.

When the child arrives at the age of four or five, the parents anxiously consult the astrologer or Jossee as to the propitious day for his introduction to a vernacular school. New year's day (Gardi-padva), the Dussera, and the last day of the Dewali, are generally fixed on, as then the stars are considered most fraught with good to man.

On the day appointed a great feast is observed. The person of the child is robed in rich embroidered silks, and decorated with gold and gems. He is taken to the school on horseback or in a palanquin attended by the blowing and clang of uncount music, and the bustling and clatter and clamour of a long train of gaily attired relatives and friends. The school, too, is busy with preparations for the reception of the new comer and his company. A rich carpet is spread, on which the boy is seated. A *pāti*, or smooth board, is placed before him, on which is depicted the image of the Goddess, Saraswati, which he is told to worship in a certain manner by the Pantoji or Brahman teacher, who officiates as priest, and who appropriates offerings of sweetmeats and money made to it. He is also presented with a turban, or a shawl, or a dhotar while pencils, inkstands, and other trifles are dispensed to his numerous pupils. The boy and the gaudy procession then return home to a gustful dinner, and a whole day of merriment and festivity.

Such is the first day of the Hindu scholar at school. The following morning he is up by sunrise waiting in the verandah, with a

bundle of paper in one hand and the inkstand in the other, the arrival of the Pantoji, whom he accompanies to school. There mats are spread on the floor, and the children sit cross-legged on them. The *puli* is spread before each, and they bend down and write on it. The *puli* is a flat piece of wood, a foot and a half in length, six inches broad, and an inch thick. It is swept over with chalk powder dissolved in gum-water, and, when dry, is spread over either with fine brick dust, or goulal, a red powder of ground rice and sapan wood, unsparingly flung about among Hindus during the Hooli holidays, and afterwards applied to the use of tyro chirographers.

The schools are opened at six and closed at nine in the morning; at noon they are re-opened, and remain so until six in the evening. The business commences in the morning with an invocation to Gumpati, the God of Wisdom. This sung, lessons are prescribed to the children, which they learn by rote. They are not divided into classes, but are all jumbled together, and all simultaneously vociferate their various tasks, making a harsh discordant jargon. If their roars grow faint, if their lips cease to move, the rod of the Pantoji falls on their backs. An hour before closing the school the pupils are all made to stand up in a line; and, with their hands applied to their hearts, they repeat the multiplication tables, the alphabet, and the sacred hymns or slokas, at the end of each one of which their hands are raised to their foreheads, and their bodies bowed in reverence to the God in whose honour it was said. The Pantoji then instructs them in a long and tedious catalogue of frivolous duties to be discharged in their houses, to which they all assent by loudly shouting—"Yes! yes!" They then prostrate themselves before the Pantoji, and are dismissed to their respective homes. The closing exercises vary on certain occasions, but the morning ones never. In the Gumpati holidays, special hymns in addition to those usually employed, are sung.

The Pantoji must be a Brahman. The wealthy Parbu, the half-Brahman Shevri, and the Sonar, will never condescend to have their children educated by one of a lower caste—by a Pattel Bawa; and this is the great reason why Mission Schools are poorly attended. The Pattel Bawas will do very well for schools established by Kulambies, but the rich and the great will never sit at their feet and receive knowledge from their lips in the present condition of things. The Parbu boy classes the Pattel Bawa with the servants who wash pots and pans in his father's house, and will not therefore humble himself by yielding such an one obedience. His turban is of the same material and form as that of the sepoys who guard his home, and the proud child is firmly convinced that all who wear that kind of head-dress must pay him homage. The parents of the child have kindred feelings—they are titled Lords, as distinct from the common herd of people, and they shun with the greatest detestation the idea that their son should be under a Mahratta. Hence it is that all the vernacular schools attended by the respectable classes of the Hindu community are presided over by Brahmans. It is too but just that the Brahmans should thus exclude the Ghattees as teachers of the Mahratti language, as the latter are very ignorant, and most gross in their pronunciation and idioms. It is amusing to hear a Ghattee uttering the words.

The system of education practised in these schools is very defective, and the children make but little progress; they take a month or more to master the alphabet, a year or two to learn to read, and still longer to write. Much time is wasted also in committing to memory useless arithmetical tables. The Pantoji, too, is slothful, and, like all Brahmans, fond of sleeping by day. In the afternoon, after the boys have collected and got to work, he considers his duties over until five and so indulges in a sound sleep. Many of the children present may not understand some calculation in the arithmetical table, or the meaning of some word in the hymns: they need his help—but he is asleep. The more advanced pupils have mastered the arithmetical tables, the rules, the hymns—they wish to read the Pothies,\* to write fluently, to compose grammatically. Their parents have left town for the country, their home is left desolate; and they would fain cheer themselves by writing a note to their fathers and mothers. But what can they do but lament their ignorance? The Pantoji sleeps, and these important attainments are not imparted to them. They dare not, however, complain of the Pantoji's not a grumbling word must pass their lips, not an angry look rest on their features. The Pantoji is fast asleep—he must be let alone! He is snoring furiously, who would disturb him? He has chewed tobacco, and drunk bhang, the leaf of delusion, and he is intoxicated. The eyes of the tyrant are closed, his frown relaxed. The children make merry, their lessons are discarded, and all their attention is given to their prostrate master. His long shendi, or lock of hair, is scattered over his bloated face, he snorts stertorously, and his limbs are fantastically stretched out. The young critics about him are possessed of great and ready humour, and their remarks on his conduct and appearance are amusing to hear. But the Pantoji awakes, his eyes are red as fire; the shendi is still dishevelled over his face. Then the laughter ceases, the wit is mute, the faces dark with fear; and the Pantoji is pleased that his pupils have kept their respective places during the hours of his highly refreshing slumber. In this way passes almost every day.

The parents never think of enquiring after their child's tuition, it is wholly and implicitly entrusted to the Pantoji. The Pantoji is a Brahman, a God, and far too good to practise such common virtues as honesty, sincerity, faithfulness. He sleeps as we saw, when he ought to teach, and even when awake neglects his charge. He is a great chatterbox, and wastes hours in idle gossiping with idle caste fellows. He is habituated to the use of tobacco and ganja, and the half of every hour is spent at the hooka. He is always going out to dinner; when, giving the school in charge to a boy, he runs to fill his stomach, purposely kept empty for a day, with cups of ghee, wheat cakes, and sweetmeat dishes. He returns late, unable to do any work, so sends the children off and rolls on the floor, unable to bear the pain of the burden he has gorged. Again, his wife has to perform some silly ceremony, his daughter must be betrothed, or his son is to be initiated into the Brahmanical mysteries, or he must consult the stars,—so the school is coldly closed, and the lying Pantoji remains in his house to sleep away the day, or to spend it in frivolity and feasting.

\* Sacred books.

The mother of the boy is ignorant of reading, writing, or casting accounts, and cannot examine into his progress. The Shastri, too, debar her from such interference. She is degraded to a life of ignorance, of dull seclusion, and to the discharge of the menial offices of her husband's house. She may not read the poets, the ethereal metaphysics of the philosophers, the books of religion, nor engage in the pursuits of natural history. Her husband is her God, and her whole duty is to attend to his home.

The father may have time and ability to supervise his child, but has no inclination. He cares nothing for the higher branches of knowledge. He considers reading, writing, and casting accounts sufficient; the acquisition of anything in advance of these a waste of time and labour. For he reasons thus: "what is the whole aim of exercising the brain? of spending years at school? of giving large sums to the Pantoji? None other than that of acquiring the ability to cast up accounts, and amass wealth! Glittering gold is the sole object to which all eyes should be directed, for which all hands should labour. For its sake men may pass through the flaming fire, over the dark waters. The whole business of life is to propitiate Mammon, to win from his exhaustless treasury full coffers of gold mohurs wherewith to raise fine houses, to buy great possessions. In the enjoyment of these things, what need of books and papers? In them the sole object of life is gained, the perfection of earthly bliss accomplished.

To spend the time which might be employed in heaping up gold, in unravelling the marvellous mechanisms of the heavens, in observing the varied hues, odours and forms of flowers, the properties and products of different plants, the various beauty of the mango-tree, the palmyra, the plantain, in noting the habits of bird, of beast and fish, above all in contemplating Him who made and sustains all, and enquiring how alone man can, justified, stand before that Maker—all this would be rampant madness. Such things, as fanatics say, may perhaps give pleasure to the mind, and strong consolation to the heart of man, but they do not increase the profits of trade, the interest of usury. The office, the shop, the kutchery, do not require philosophers, historians, poets.

To guide ships and steamers laden with cargoes of import and export round the world, to make remote voyages of discovery, to traverse the strange lands of unknown nations, and perish in the foolish adventure, all this may require geography perhaps.

Those who desire to beg and starve may learn astronomy.

To bore mountains, to bridge valleys, to connect towns by railways, and the ends of the earth by telegraphs, may require mechanics. To become a good story-teller, a wandering minstrel, may require history—the memory of the names and dates of battles, the deeds of heroes, the coronation of kings, the assemblages of parliaments, the enactments of laws, the banishment of dynasties, the fall of empires.

To study the condition of society, its grievances, its wants, its springs; to meditate on the revolutions which have given the impetus to human progress, in art, in science, and religion; to understand the connexion in which man stands to God, the will He has revealed to us, the duties we owe Him; all this may best fit anthropologists, statesmen, theologians. All these are fitting pursuits for

such as sailors, wizards, story-tellers, ascetics, medicine; but of what profit to the respectable Hindu who is in earliest about life, the *samnum bonum* of which—gold—is even more much retarded by accomplishments so beggarly, yet so *propitiously* necessary, as reading, writing, and account casting! Such are the unreasonable reasonings of the Hindu parents.

The Pantoji is highly pleased with it, and confirms them in it with a thousand lies; for he is ignorant of the higher branches of education, all he knows having been picked up in a school similar to the one he now conducts. He can read simple manuscript, can repeat by rote the multiplication tables, a number of sacred hymns, and can write; beyond this he has learnt nothing, understands nothing. He knows not the difference between the past and present tenses, and the moods of verbs, between a noun and an adjective, and would be puzzled by the first rule of syntax. He speaks fluently, but cannot spell; he turns black and blue if asked to solve a simple mathematical problem, avoids the assemblies of the Shastries, and hides himself in a corner when any question of theology, metaphysics, or histories is mooted. He is shallow and weak-minded, he has no power of reflexion, and his judgment is distorted. In a word, he is fit in these days for; nothing but the work of a peon, or a cooly, or a cook's mate.

The punishments inflicted on the children by the Pantoji are various. For a slight fault they are beaten on the palm of the hand with a "*panmutri*"—a rod with a round piece of wood at its extremity, or are made to stand up or sit down a number of times holding their ears, called *khanghodia*, or to stand for some time in a bent posture, holding the big toes with the hand, called *angotha*. When the fault is great, a number of slates are put on the back of the boy standing in the angotha posture; a pebble is also placed on his neck, and if by the slightest movement the slates fall, or the pebble rolls off, the rod of the Pantoji falls heavily on him. It is a very cruel punishment. The others will not bear specification.

The effect of all this is most mournful. The children look on the Pantoji with slavish fear and hatred. To their young imaginations he is more ghastly than Backdur, and their dreams are haunted by the workings of his iron fingers at their throats. They wish that like Krishna they could at will put an end to those they hated. One recommends that a pit should be sunk beneath the spot where the Pantoji usually sits, that brambles be placed in it, and a carpet spread over it, and then to his astonishment he will find what it is to suffer cruelty! Another suggests, that while thus entrapped, the slates should be heaped on him, and the young conspirators roar with laughter.

The Pantoji is cruel, because no good principles influence his uncultivated mind. His character is stained also with many other foul blots. His conversation is revolting in the extreme—every wicked expression degrades his lips, his most trivial statements are confirmed by some horrid oath, and the name of God is invoked without awe and trembling to confirm the darkest lies. Unsatisfied with the fees he gets from the parents of his pupils, he shamefully filches their pocket-money on the flimsiest pretexts or the most false pretences. His conscience does not sting him, for it is dead; and should a pupil refuse to slip a copper into his greedy hand, how

cruel is his fate! How often, and how severely, alas! will he be flogged! Innocent recreation is denied to the children; the Pantoji considers play the road to beggary, and the parents agree with him. They are only pleased when they see their tired children in the evening, squatted in the verandah with folded arms, or sleeping in the cool garden, instead of running about and sporting among the branches of the banyans and climbing up into the shady mangoes. This is one reason why Hindus usually grow up so weak and indolent, preferring lying down to the earliest rest. The Brahman's only luxuries are eating, drinking and sleeping. The monthly fee of the Pantoji is eight annas for each of his pupils, and a seer of rice and a piece or two every week—given the day before the weekly holiday. He also gets rich presents on the thread ceremony, and on the marriage of his pupils.

The cruelty of the Pantoji has given rise to many curious proverbs, which manifestly are the production of children of intelligence and not of grown-up men. They are all clever and amusing, though some will not admit of publication. They all set the Pantoji up as the butt of ridicule. With the exception of these proverbs there are scarcely any verses extant which bear any trace of juvenile ability.

It is curious, indeed, that Hindu youths are not fond of composing verses, and yet that so many should be in circulation regarding the Pantoji. There are countless objects about the boy calculated to attract and deeply engage his mind. There is his home and its affections, his garden and its beauties, the frowning ghats which encircle it, and the starred firmament above it. There is the sublime waterfall from the mountain gorge, the river winding through the plain, the ocean breaking on the beach, and buffeting the lonely bark, regardless of the souls on board. Or there is some pompous ceremony at the temple performed amidst the ringing of a thousand bells, the music of the Brahman's and the devotions of crowded worshippers; or there is a gay marriage procession. All these have a charm to the poet, but one and all have failed to affect the Hindu infant. There was one strange object only that roused the infant imagination from its sleep,—the grim looks, the iron fingers, the loud voice, the dark threats, and the biting lash of the Pantoji.

As might be expected, the verses are crude, and deformed by ghastly and detestable thoughts. We regret these melancholy productions, which establish one fact, viz., that the cruelty of the Pantoji must have been monstrous. It is no wonder that most of them are of a most improper turn. The whole literature of India is grievously open to criticism and censure. There is in it much rich imagery, many graphic pictures of nature, many sublime flights of thought,—but all amidst a heap of rubbish.

The diction of the Hindu poems is incomparable, the rhythm perfect music to the ear; they are adorned with illustrations from nature and rich inventions, and the charmed mind might pore over them for hours, spite of the speculative flights, metaphysical dogmas, and the absurd jargon of philosophy, entwined with art in the poetic wreath. Were these the only spots on Hindu literature, none would condemn it. But, in truth, it is radically perverse. When the verse is harmonious to the ear, the words may be unintelligible; however confounding the mazes of the reasoning, if it be illustrated by sparkling imagery and

robed in gorgeous drapery, none will refuse to grapple with it; but when we find licentiousness unblushingly the burden of every poem, spite of their few great excellencies, we must condemn them without qualification. A vein of immorality runs through the entire literature of India. To regenerate it we must commence at the fountain-head—the schools—which must be brought under the influence of Christianity, without which nothing can be pure, nothing holy. At the vernacular schools no lessons are given in morals. The sins of lying, deceiving, and stealing, to which children are so prone, because so tempted, are not pointed out to them by the Pantoji. They are not pictured to them in such colours as to excite detestation; nor are their consequences held up, so as to work on their fears. They never see a lie or a theft punished by the parent,—the master is the magistrate. The Pantoji they know to be a liar also, a swearer, a thief, and all that is bad. But he is not merely a man, but a god,—all that falls from his lips is divine, and to be carefully stored in the memory. His actions, manners, tricks, conduct, and conversation are carefully imitated with pride by his pupils. The deceptions he practises on them, they in turn victimise their brothers and sisters by. As they see him speak and conduct himself, so they speak and conduct themselves, at home and abroad in the streets, regardless of parents and superiors. Indeed, parents rather take a pleasure in the wickedness of their children, and encourage them in the Hooli feast to go about brawling in the streets, to besmear their bodies with filth and daubs of colours, to run about beating drums, to throw ashes and gholal at passers-by, and to insult the respectable in the most impertinent ways. They are encouraged to steal, and to lie, to hide the theft, to attend nauteches, and to laugh at those who will not join them. Indeed, the little brats are turned into little devils. Such are the consequences of the attention, example, and instruction of the Pantoji. They are awful.

The sacred hymns, sung every evening in honour of the gods, give them no clue to the right. Krishna was a consummate burglar: while poor milk women were fast asleep in bed he broke through bars and bolts, and stole their curds and milk. He managed the affair with such cunning, that instead of being heavily chained and thrown into a dark dungeon, he was crowned with laurel and applauded by his besotted brethren. He was poor at first, but amassed wealth by tyranny, and was so cruel as to feast his eyes on the assassination of his uncle. His other actions cannot be mentioned without a blush of shame.

As he was, so were Brahma and Shiva, and all of the millions of gods which disgrace the Hindu Pantheon. The Pantoji is profuse however, on the subject of caste—on what should be eaten, what abstained from, on idolising the Brahmins and avoiding the Mahars, on his genealogy, his rights, his privileges, and on the mean origin and low position and servitude of the Sudras. He is ever eloquent on the necessity of feeding, clothing, and sheltering Brahmins, and of subscribing to the marriage of their sons and daughters, and is ever mourning, in melancholy terms, that the native rule has departed, and with it the Rajahs, who, supplying all the wants of the Brahmins, left them nothing to do but to eat, to drink, and to sleep. If the influence of the school is bad, equally so is that of the home.

The Pantoji does not set his pupils an honourable example, neither do nor can the parents their children.

The mother rises at sunrise, and then, after the performance of some religious ceremony, enters the kitchen, where her time and attention is wholly engrossed until the forenoon. The child is then at school. The morning the father spends in running over the household affairs. In the evening the mother is again engaged in the kitchen, preparing for the return of the father from office. When the father enters, tired and in bad temper, he reclines on a sofa, and drives off the children who gather round him. He cannot instruct them any more than the busy mother. Now the supper is ready, and they all rise to partake of it. They are all sitting in rows on wooden stools, and the mother is distributing food; all are merry. The children are telling stories to their father—the father to them. But no moral lessons are inculcated, no moral example set. The supper over, the father throws on his clothes, and absents himself from home. The children are sorry their father has so quickly left and quickly betake themselves to bed. The mother is tired, and unable to attend to them, and so they are left without even the elements of morality.

In the lower ranks of life the position of the children is yet more melancholy. The daily scenes and occurrences of their homes, and the example of their parents, are most pernicious to them. The father goes out to toil at sunrise and does not return until sunset. He has then to bear up against a host of aggravations, to combat many a difficulty. He comes home weary and hungry, and weighed down by the load of labour and cruelty he has endured during the day—perhaps burning with revenge. At home, however, he hopes to find peace and cheerfulness. He forgets the lashes he has received, the revenge he nourished, the pinchings of hunger. Poor man, the hope is a delusion, the fair scene he fancies before him, a mirage. He steps into his house, and he finds the face of the wife dark, her eye flashing fire, her lips muttering anger. It is supper time, and she sets before him bare rice and salt with unbearable discourtesy. The man, being possessed of no good principles, and moreover, being slightly intoxicated with toddy, is greatly provoked, and rebukes her sharply. The woman, always ready for a quarrel, "opens on him a battery of taunts and upbraidings." She curses the day she was born, that her cradle did not become her grave, that she was ever wedded to him. She ransacks her memory for the past ill-doings and injuries of her husband. The husband is maddened. He has not a tongue like hers, so has recourse to more powerful means to stop her cataract of words. He kicks her down, snatches a rod, and lashes her unmercifully, until the orator is dead mute and all but breathless. The child is a silent observer of all this, and an impression is made on his mind which can never be effaced. Amidst such daily scenes and influences the virtues of childhood are smothered and utterly destroyed. God and good are altogether put out of the thoughts of the children. Never from their hearts bursts the sublime apostrophe

"Ye in heaven,  
On earth, join all ye creatures to extol  
Him first, Him midst, Him last and without end."

It must be understood that the school and Pantoji here represented are not of the same stamp as the various Missionary and Government schools and schoolmasters. The latter are conducted on different and altogether better principles, and their Pantojis are generally possessed of greater knowledge and more self-respect than the vernacular Pantojis.

The pupils of the late never-to-be-forgotten Ball Gangadhar Shastri, set over the Government Mahratti Schools in this town, are highly intelligent, and most zealous in the discharge of their duties.

Having thus described as well as we are able, and from our personal experience, the state of the vernacular schools, we will conclude with a few remarks on the present state of the Brahmans, the depositories of Indian literature. The Brahmans as a rule have undergone a most melancholy change. They retain the grand old name of Brahman, but have lost their grand old virtues and transcendent gifts. They claim their ancient honours and titles and privileges, but have no right to them, beyond the pretended divine right of divine origin, being not a jot above the laity in intellect and moral refinement. They have degenerated into an indolent and ignorant class, utterly incapable of perusing and understanding the able and learned works of their ancestors. The oratory of the ancient Brahmans was fervid and luminous, their imagination fertile and sublime, their logic keen, and they so cultivated and exquisitely adorned the Sanscrit language as to call forth the eloquent panegyric of Sir W. Jones. Their poems may vie with Homer and Milton. Their theology was profound, and the attempts made by Vyasa, Gantama, Jaylomani, and Patanjali to fathom the abyss of metaphysics might do honour to the intellect of any nation, past or present. The doctrines of Pantheism, Materialism, Idealism, Transcendentalism, &c., &c. which have attracted and perplexed Europe, all originated by the banks of the Ganges. The disciples of Goethe and Hegel hang on the lips of Indian philosophers, and their admiration for the ethereal vedantism of Vyasa has degenerated into servile adoration. These old Brahmans commanded universal respect, and deservedly held every post of honour, toil, and emolument in the State. But the literary sun of India soon set, and the shadows of night fell.

With his literary glory have also passed, or are passing away the worldly splendour, rank, and privileges of the Brahman. His worshippers have diminished—those who mock him and hold him in contempt have increased. Those who went to him to have a note written, or to hear the legends of their gods, can now learn at English schools to write to their relatives in the country and read the sacred books for themselves ten-fold better than the rude Brahman.

The Brahmans in former times held the gates of knowledge, and opened them only to the wearer of the sacred cotton thread, so, when the State was involved in difficulties from which it must be extricated—was there a financial crisis to be wisely treated, a town to be placed under a new administration, a treaty to be made on honourable terms—a Brahman must be sought from the sacred cloister, the wilderness hunted down for a Rishi. But now that education is administered to all—Chatriyas, Vaisyas, and Sudras—the ascetic is left to perish in the jungle or the cell. Honour and wealth are now the prizes of intellect and morality, wherever found. The weavers

of cotton, of silk, of woollen thread, and the outcast without a thread, one and all now start equal in the race of life, so far as impediments on account of mere taste are concerned. When the Brahmanical priesthood was marked by ability, learning, and probity, the priest drew the revenues of a great city, was surrounded by princely splendour, rode on an elephant trapped gorgeously, and was followed by a long train of horsemen bearing shining spears and shields of gold. The Rajahs graced their Subhas with their presence. Their own tables and homes were ever open to the stranger and the needy, and every evening in their palaces they feasted the noble and the great with music of the first order. The populace adored them. But with their loss of honesty and knowledge they became beggarized. The *Bhat*, as he is now called, will for a pice now perform his professional functions, will work in our kitchen, or tend your children for board and a yearly suit of cloths. He does not blush to wear the uniform of a peon or a common *havildar*, and beg rice from door to door.

In the districts the state of the priesthood is still more deplorable. The Brahman's congregation is not sufficient to supply his wants, and he falls into family anxieties and embarrassments. His hovel daily grows more bare. A blanket, a wooden stool or two, a few vessels, and a dozen gods or so of brass and stone are all his goods. He is forced to tend herds and flocks, to collect cow dung, to hew wood, and to send his children to glean in the fields, and to bring water, from the tank or well. Often they take service in the house of some rich farmer, or of the village *Patel*, for bare subsistence. Sometimes, spite of every effort, he cannot fill his stomach, and he is forced to have recourse to the fat *Marwarree*. The enormous interest on the debt he incurs increases it so rapidly, that notwithstanding he may pay off the original sum over and over again, he finds himself in a few years crushed to the ground by the overwhelming burden, when the Bailiff and the monster *Marwarree* stand at his door and carry away his pots and gods, perhaps throw him into prison.

There are however noble exceptions; there are some Brahmins in the large towns who can speak Sanscrit, who understand the abstruse works of the Vedas. The Sanscrit has such a charm to them that they will not condescend to speak Prakrit in their grand Subhas. They are shrewd and acute wranglers, and when they fall in with each other, at once enter on some controversy which may last for days. It is an attractive sight—those grand-looking Shastrees, sitting round a rich carpet, and arguing with ingenuity and power. Now all listen to a graphic illustration, to some authoritative passage from a sage, or a pointed quotation from a poem. Then all are again uproarious for victory. Their faces glow, their eyes flash, and there is on all sides a rapid flow of words and wit.

At last one of the debaters is dashed down, and a roar of laughter bursts from all sides. The victor is mightily pleased, and does not blush to proclaim his prowess. Even to one not understanding Sanscrit, there is great pleasure in these meetings. The mere words are music to the ear. These Pundits, however, are guided by no high principles, truth is not their aim, but only the vain display of talent, and the applause of victory.

These Pundits, however, cannot compose a poem or construct a

drama. Now and then new Pothies issue from the press, the legend of some god or saint, but they are innocent of all original merit, and are meagre in the extreme, spite of unblushing plagiarisms. The crow in peacock's feathers was still a crow,—let the frog distend itself to the size of an ox, the weed rise to the crown of a palm, and we shall then believe these Lilliput prodants equal to the giants of the prime, set them on equal pedestals, and grave their tablets with equal depth.

It must not be inferred from this, that the intellect of India has for ever set to slumber, and it shall arise a giant from long slumber. The real golden age of India has not passed, it has yet to come. By the blessing of Providence the English Government has been established throughout this country. Law is equitably administered, every person is protected, property is secure, the condition of the agricultural classes has been ameliorated, the resources of the country have been developed, its commerce liberated, railroads and electric telegraphs are being projected in every direction, roads have been constructed, and canals to spread the fertilising waters of the Ganges, the Godavery, the Krishna, the Cauvery, and the Indus, over naturally barren tracts; Colleges, Museums, Schools, Dispensaries, Hospitals, are raised everywhere, vaccination and prison discipline have been introduced, the Bheels, the Khonds, the Coolies, have been partially civilised, the frontier tribes subjected, infanticide, suttee, human sacrifice, thuggee, dacoity, and book-swinging suppressed, character and education tests are required of candidates for Government employ, and, above all, liberty, of conscience is secured to all. Here is every condition favourable for the resurrection of India from among the dead. But Christianity is the *only* stimulus that can quicken into life, and however favourable all else may be, if that stimulus be withheld there will be no regeneration, no golden age of Indian literature, until her sons drink deeply and drink only at

"Silva's brook that flow'd  
Fast by the oracle of God."

—*Bombay Quarterly Review*.

### THE SCIENCE OF EDUCATION.

"Is all provinces there are artists and artisans; men who labour mechanically in a department without an eye for the Whole, not feeling that there is a Whole; and men who inform and ennoble the humblest department with an Idea of the Whole and habitually know that only in the Whole is the Partial to be truly discerned. The proceedings of these two \* \* \* must be altogether different."—[*Carlyle's Essays*, Vol. 2, p. 175.] These words of Carlyle's gives us a great truth which I am trying to impress upon you with special reference to education.

We need, as I maintain, a *Science* of Education which shall explain to us what our task is; and we need an *Art* of Education which shall enable us to perform the task which the science has determined.

We have found that educators from the "*Revival of Learning*" have for the most part been led astray by an *ignis fatuus*; in other



words, they have been far too much concerned with the giving of knowledge for its own sake, and thus, engrossed, they have thought little of the nature of the child and cared little about the development of its faculties. Step by step the great thinkers on the subject have arrived at the truth that the educator is not so much a teacher as one who wisely and benevolently superintends the development of the child's God-given faculties. Pestalozzi was the first to arrive at this truth in its completeness, thereby laying the foundation of a science of education. More than this: he also showed us how we may attain to an art of education. "Nature," said he, "develops all the human faculties by practice, and their growth depends upon their exercise." This gives us a clue to the art.

The science of education which has been commenced is one of the sciences that can never be completed. It is in fact the science of human nature in its early stages. When we know all about the minds and bodies of children and all the laws of their growth we shall have a perfect science of education, and not till then. But some elementary lessons we may learn from others, and much, very much, we may observe for ourselves. I hope we are agreed that the true educator will not look on the young ones committed to him as first and foremost learners, but there is one whom he will always think of mainly as a learner, and that is himself. The whole life of the educator should be a constant learning. He has an infinite field of discovery before him, for he may (if he will give the time and thought necessary for all discoveries) go on discovering more and more of the characteristics of children and of the best way of influencing them. When once he has adopted the theory of his task that it consists in a benevolent superintendence of the activities of those committed to his care, he ceases to be a mere hearer of lessons and exacter of exercises. He feels that there is no part of the children's life with which he is not concerned. Wherever their activities, whether of mind or body, are exercised he will consider the result, and though he will not be always meddling, he will be always on the look-out to shield his pupils from bad influences and bring good influences to bear upon them. His love and sympathy will be felt by them both in their work and in their play. And when he finds how much we are to our children, how much they think about us, and how they form themselves after our example, adopt our judgments, our opinions, our very likes and dislikes, he cannot but desire increase in wisdom and goodness for the sake of those who will benefit by every good quality in him. It is indeed only by wisdom and goodness that we can become in any degree worthy to be entrusted with the work of education. We need wisdom to see our task aright. We need goodness to devote ourselves heart and soul to its accomplishment.

I have perhaps by this time convinced you that no one can be an educator. No one indeed can be a perfect educator or even come near to perfection. But throughout life it is true that high ideals are unattainable, and yet we are none the less bound to set them before us. "Above all," says Carlyle, "let us keep the Ideal \* \* \* ever in our eye: for thereby alone have we even a chance to reach it;" or, as we may truly add, even a chance to get nearer to it than we now are. Indeed the very essence of the Christian life is the effort to approach an unattainable ideal—divine perfection

Let us then not be afraid to adopt a high ideal as educators, and we shall find that this ideal, far from being useless to us as practical men, will have a most powerful effect on our work and will prevent it from becoming, as it always tends to become, mere routine work, like that of the poor horse turning a wheel in the dark till at last it loses its eyesight.

I now go on to show you if I can, one or two instances in which theory may have a very practical effect on our teaching. Let us see first how our science stands, with respect to the faculty on which we make the greatest demands, the memory.

If we attempt to go very far back in considering the action of the mind or the ways in which it is affected, we find ourselves in that uncertain region known as metaphysics. I do not in the least wish to imply that the study of metaphysics is not a valuable study, but we must base educational science on firm ground, and this metaphysics will not at present afford us. I will not then make any assumptions, but simply take what experience has established.

Whatever we see or become conscious of by way of our senses has an effect upon our minds; also everything that we think or wish. Whether that effect is in all cases indestructible is not a settled point,\* though some very singular occurrences have proved that we retain far more than we are conscious of. A remarkable case has been reported from one of the London hospitals of a man who in the delirium of fever suddenly began to speak in an unknown tongue. The language was at last identified as Welsh. When the man recovered he said that he had spoken Welsh when a boy, but had since lost it, and could not when in health remember a word of it. So it may be that all impressions are permanent, but whether or no, a vast number of ideas remain in the mind, and these may be called up either by an effort of the will or by the suggestion of some connected idea. The power of reproduction is one which is largely used in the school-room, but in cultivating as we think the memory we often do not ask ourselves what the power we are cultivating really is. There seem to be different kinds of memory, so to speak. One person can remember words, another numbers, another places, another never forgets a face. These different kinds of memory depend partly on natural ability, partly on training. At Trinity College, Cambridge, there are in residence between 300 and 400 undergraduates, of whom rather more than 100 change every year. Yet the porters who have to know every one by sight very rarely ask a name more than once. Still more extraordinary is the way in which they remember every one's address. They are in fact perfect walking address books. Knowledge of this kind is mostly kept as long as it is wanted and then thrown over, but when I returned to Cambridge after an absence of ten years, I was amused to find that the porter remembered the letter of the staircase on which I had lived although I doubt if I could have told this myself. Illiterate people are sometimes so

\* Since these lectures were written there has been a discussion on the subject in *Mind* and the *Spectator* (see *Mind* for Oct., 1877, and *Spectator* for Oct. 13 and 20, 1877.) Surely practical tests are out of place here. There are some things scientifically certain which, except from a scientific point of view, are not true at all. When the man of science says that the surface of the water in a basin is a portion of an ellipsoid, nobody attempts to refute him by proving experimentally that it is a plane.



thrown upon the resources of their memory that this becomes extraordinarily powerful. There have been cases of such people doing a great deal of complicated buying and selling, and trusting to their memories with as much success as other people trust to their account books. The way in which the memory is strengthened by habit is, I think, well illustrated by the following anecdote, trivial as it is in itself: A country postman once told me he was in the habit of getting an occasional lift in a butcher's cart, and he then saved the butcher's man trouble by taking orders for him at houses that lay off the road. When several things were ordered he had some difficulty in keeping them exactly right in his head till he rejoined his friend, but the butcher took not only these orders but orders at houses for miles round, and without difficulty kept them all in his head till he went back to the shop, nor did he ever make a mistake however numerous the orders might be.

I have given these instances to show you how memory is developed by practice. And you will observe that the general memory is not strengthened by these special developments. The college porter and the butcher are like other men except with reference to the special class of facts they have to remember.

Neglect of these very obvious truths has led to much injurious action in the school-room. The maxim of the old scholars was that so often repeated by Casaubon: "*Totius quisque seil quantum memoriâ tenet*." Every man knows just what he remembers. From this it has always seemed the teacher's duty to exercise the memory. But for want of careful discrimination of the different kinds of memory the schoolmaster as a rule has mostly developed a kind of memory which is least valuable, if indeed it is not injurious to the other powers.

We must all have met with the following experience. We are engaged in thought, when a question on some subject not connected with our thoughts is put to us. For some seconds we go on thinking, and the high remaining the sound of the question we are quite unconscious of its meaning. We then turn our attention to it and, as it were, rub off the meaning from the idea of the words which we have retained. From this we discover that the sensational and intellectual functions of the brain are perfectly distinct. Each of these functions has its peculiar kind of memory, and it would seem that sensational memory may be developed at the expense of the intellectual. Certainly the two do not necessarily grow together, and stupid people and even idiots often have great power of sensational memory, *i.e.*, memory for mere sounds, with which we may classify the memory of facts retained without consciousness of their connexion with other facts or with one another. This probably has given rise to the French proverb—*Beaucoup de mémoire et peu de jugement*, and Pope says:

"Thus in the soul while memory prevails  
The solid power of understanding fails."

I have known some singular instances of the strength of this kind of sensational memory in persons of weak intellect. I have met with the case of a lad who though he knew nothing else, knew the times of arrival and departure of most of the trains in and out of London, which he learnt up every month in Bradshaw. A pupil in a school where I was a master had a remarkable faculty for learning by heart.

though he was very dull in other respects; and his memory was so purely sensational that when he was set to learn the Kings and Queens of England with dates so as to be able to write them down, he learnt the list of Kings and the list of dates separately and wrote them without endeavouring to connect them in his mind; *i.e.*, he wrote first the list of Kings without thinking of dates, and then the list of dates without thinking of Kings. We discovered this by one of the dates having dropt out, so that in modern times the kings came to the throne at their death. On being asked about this, he explained his mode of procedure.

Now it cannot be denied that most school teaching of children tends to cultivate the sensational memory mainly if not exclusively. The schoolmaster wants some ostensible examinable results of his teaching, and he gets this most easily by making his pupils to learn by heart. There is a tendency in both teacher and pupils to make learning go easily, so to say, and exercise soon gives great power to the sensational memory, so that if it is not over-driven it jogs along with much satisfaction to its possessor and his teacher. As it has been well said,\* the child uses his sensorium to learn words is using an instrument perfected for him by the great Artificer; but when he comes to use his intelligence he no longer uses a perfect instrument but a faculty which is as yet only partially developed. He cannot therefore use it so easily. He must make an effort and puzzle his head before his intelligence will act at all. I was lately hearing some children say tables. "What is 7 eights?" I asked, and got the prompt answer, "56." "How many eights added together make 56?" I asked next, and no answer at all was forthcoming. The first question was addressed to the sensational memory, the second to the intellectual. Another instance occurs to me. A lady who had just given a lesson in an elementary school to some young children, told me she began to talk about geographical definitions. "You know," said she, "that an isthmus is a narrow piece of land joining two continents." "Connecting, teacher!" shouted the children. "Very well," said she "connecting two continents. Now, who can tell me what is meant by connecting?" and she found that not a child had the smallest notion.

Now as things run far more smoothly when the sensational memory only is exercised, we cannot be surprised that so much use is made of it, but the development of this kind of memory and the neglect of intellectual memory leads to the stupefying of our children. "They won't think," complains the schoolmaster quite pathetically. Why will they not? They think about their games, about their schoolfellows, about their masters, about their homes. They think shrewdly enough on these subjects, and perceive many an error in the master of which he too might think with advantage; but about school work they certainly seem to have no power or will to reflect on anything. Very much of this comes from the common notion that the first school lessons must exercise the sensational memory. Children learn Kings and Queens, capital and county towns, tables,

\* By Mr. Brudenell Carter, in his papers "On the Artificial Production of Stupidity in Schools." [These excellent papers Mr. Carter has allowed us to republish in this Journal. See Journal of Education for May and July, 1875. Ep. J. of Ed.]

parts of speech, declensions, conjugations and the like, and they are not expected to have any conception whatever to connect with these sounds, so they naturally acquire the habit of using in the school-room the sensational memory only, and when the habit is well established the luckless schoolmaster is appalled by their seeming stupidity.

School work then, as a rule, makes too much use of sensational memory. Next it develops the carrying rather than the storing memory. The mind by practice can acquire the art of rapidly getting up a lesson and as rapidly forgetting all about it. This carrying power is especially useful to barristers and actors, and they perform great feats of this kind. Actors study parts they are likely to act often, but they get up a part that is wanted only for a special occasion, and a part thus got up is forgotten immediately after the performance. The memory adapts itself wonderfully to circumstances. A friend of mine who has to review a great many books, tells me that when he has read a book he remembers all about it till the review is written, and then he gets rid of the subject from his mind as easily and, as far as he knows, as completely as he gets rid of the book from his table. Now the getting up of lessons fosters this habit of mind. The mind has to lade itself with certain knowledge and "carry" it for a few hours, and then it drops it not without a feeling of relief.

"The tear forgot as soon as shed"

is supposed to be a characteristic of childhood, and so very commonly is

"The task forgot as soon as said."

Unfortunately our competitive examinations place a very high premium on the cultivation of this kind of memory. I remember in a large school a prize was offered for the best examination in a certain set of books on a period of English history. When the appointed day arrived some cause of delay arose, and it was announced that the paper would not be set for a fortnight. One of the boys who was very successful in such examinations thought himself much injured by this alteration. He had prepared himself he said, for the day fixed, and in consequence of the change he would have to go all over the subject again; otherwise it would have entirely gone out of his head in a fortnight's time. This carrying power is no doubt useful in some circumstances, but it is not memory, if we consider memory as the storing power of the mind; and its extreme development in the school-room is no doubt injurious.

We learn then, that the schoolmaster in trying to cultivate the memory too often cultivates the wrong kind of memory; first, that which is merely sensational, and secondly, that which is merely the carrying as opposed the storing power of the mind. For the cultivation of intellectual memory we must use aright the forces known as the three A's: they are Attention, Arrangement, Association.

The art of memory is the art of attention, said Dr. Johnson; another thinker has declared that genius itself is nothing but the power of continuous attention. The mind's power of retaining an idea varies as each of the following three things: 1st, the strength of the first impression, which strength depends on the whole mind being concentrated on forming the idea, in other words, on the amount of attention given it; 2nd, the length of time during which the idea keeps possession of the mind; 3rd, the frequency of its renewal, &c.

the number of times it is brought back into consciousness. The first thing to be secured then is *attention*.

As we all know, there is such a thing as voluntary attention, when the mind resolves to fix itself on a certain subject and does so. We are constantly expecting young people to give voluntary attention to the work before them, and we say that the power of voluntary attention is of the very greatest importance. No doubt it is. But voluntary attention is one of the highest functions of the trained intellect, and nothing is more ridiculous than to make great demands on the voluntary attention of young people. It is in fact to expect at the outset of their intellectual training just what that training will in the end give them where it is perfectly successful. In the early stages we must think more of involuntary than of voluntary attention and by means of it must cultivate a *habit of attending*. Even involuntary attention is not continuous in the very young. We see the infant attracted by some object, say a bunch of keys. In a few seconds it throws this away and grasps at a watch chain. In a few seconds more it turns from this to look about for something else. Here we have the power of attention in the earliest stage of all; and in the next, i.e., in young children, there is as we all know a restlessness which can be satisfied only by perpetual change in the direction of thought. If the teachers neglect this simple truth about the nature of the mind, the worst consequences are likely to ensue. The children will soon cease to attend even to instruction which for a little while may be well suited to them. When they are no longer occupied with the matters in hand they speedily become "naughty," that is, each child's energy takes an independent direction and the harmony of the class is at an end. To restore it the teacher has recourse to punishments and the children are thus from their earliest years accustomed to look upon learning as one of the chief troubles of life.

Instruction in its earliest stages then should aim at securing the involuntary attention of the children, and should gently foster the increasing power and habit of attending to one thing without wandering. Later on, when the mind has got some power of dwelling on a subject, pains must be taken to cultivate *voluntary* attention. There are studies especially valuable in this way, as e.g., geometry; but the main thing is to get the whole mind concentrated in the work in hand, whatever it may be. This habit of concentration is fostered by letting school exercises and preparations be done without fixing a definite duration for the work. If boys have no inducement to get the work done soon, they will acquire a pottering habit, and their minds will wander; but if they may turn to occupations more pleasurable to them as soon as the work is done, they will put out all their strength to come to the end. Over-hurrying is indeed likely to take the place of pottering, but it is the lesser evil of the two, or at least the easier of correction.

But I have been considering continued attention rather than intensity of attention at the outset, which is the cause of strong first impressions. Now intensity of attention with the young at all events, depends entirely on that almost unaccountable thing which we call "interest." When the mind is interested all its powers are ready for action, when uninterested it seems in a state of coma. Whenever then we can arouse interest we are likely to impress the memory.

The converse of this is recognized in the affairs of every day. Suppose, *e.g.*, an acquaintance invites us to dinner and we having accepted the invitation forget the engagement and do not go, the real reason of our non-appearance is regarded as an insult, and that for an obvious reason. Our forgetfulness is a proof that we were not much interested, for if we had been we should not have forgotten it. Similarly, in the school-room, if the master were to announce to the school "The French elections have been fixed for the 18th of October; try to remember that"—the chances are that the 18th of October would not remind a single boy of the elections. But if he said "On the 18th of October there will be a total eclipse of the sun and it will be dark in the middle of the day," nobody would fail to expect this when the day arrived. And so we find everywhere that our knowledge, which is another name for our memory, spreads just where we take an interest and nowhere else. The first step then towards bringing about healthy exercise of the memory must be the awakening of interest in the thing to be remembered.

But when a vivid first impression is once secured the mind must dwell upon the idea before it is allowed to pass out of consciousness; otherwise speedy recollection will be impossible. We see this from the way in which novels are forgotten now that the supply is unlimited and boys devour them in great numbers. Years ago when novels were not easily obtained we did not hurry over the feast and our impressions were more lasting than those of the young novel readers of now-a-days, who remind one of the old joke of reading, *Ten Thousand a year*. In school teaching the concepts when accurately obtained are often not properly dwelt upon, and it is no unusual thing for a master to finish off all the definitions with his first Euclid lesson. He assumes that when once the concept is formed it will remain in the boy's head for ever, whereas it must be dwelt upon till the mind is familiar with it; and further, it must be brought back again and again into consciousness, so that it may present itself uncalled for whenever it is wanted. For in the mind well furnished and well trained the ideas will deserve the character once given to an old courier: They will never be *in* the way, and they will never be *out* of the way.

This brings us to the third thing necessary, *viz.*, frequent repetition. All great authorities in school matters are agreed on the necessity of a good foundation, *e.g.*, of knowing thoroughly the things taught first. There is indeed, as we have already seen, a great difference in the various notions about knowledge. Some people mean the exercise of the sensational memory only; others, like Pestalozzi, mean thorough grasp of elementary ideas. Some teachers, again, require in every subject thorough mastery of tables by the sensational memory and at the same time full play of the intellectual memory about ideas which the tables serve to suggest and connect.\* But all alike require that the ground should be gone over again and again till the recollection, the bringing the idea back into consciousness, takes place without effort. Only then has the knowledge become a part of the mind's available property. The following amusing passage from an admirable little book, Jacob Abbott's "Teacher," puts

before us very clearly the difference between the perfect and the partial action of the memory:—

"Can you say the Multiplication Table?" said a teacher to a boy near him in class. "Yes, sir," said he promptly. "Begin at  $2 \times 1$ " said the teacher. The boy went through the 2's slowly but quite correctly. "Begin again," said the teacher, "and I will try an experiment. Mind you don't stop till you get to the end." Directly the boy had begun the 2's the teacher also began saying aloud the 7's. The boy went on a little way and broke down. "I know the table, sir," said he, "but I can't say it because you put me out." "Very well," said the teacher; "say the Alphabet." Directly he began, the teacher started also, beginning at another place, but this time the boy went on to the end without difficulty. "You see, now," said the teacher, "that though you know both the Multiplication Table and the Alphabet you know them in very different ways."

Now the things which the mind will have to use frequently we want thoroughly mastered, and this cannot be secured without frequent repetition. But then arises one of the teacher's greatest difficulties. The mind, especially the mind of the young, will enter into nothing in which it is not interested; and mere repetition is a deadly foe to interest. How then is interest to be kept up while ideas are brought back into consciousness often enough for the mind to be able to recall them without effort? I cannot now say all that I should like to say on this subject, but the gist of it all would be this: The true secret is, as I believe, to make as little use as possible of merely sensational memory, and to vary the mode of bringing the idea back to the mind. Take, for instance, the Multiplication Table, which is learnt and perhaps must be learnt at first by the sensational memory: it is easy to ask questions in a variety of ways so as to set the mind to work upon it. Suppose, *e.g.*, the 4 line is known, the teacher may ask, If I take 4 and 1 and 4 and add them together, how many 4's should I have?—what will that make? If ten 4's are 40, and I take away 4 how many 4's are left?—how many would that be? When the children are more advanced they may say tables in a variety of ways, *e.g.*, the teacher may say, Name all the multiples of seven  $\angle 100$ . Name the odd multiples of nine  $\angle 100$ . Go up all the numbers to 100 and say which are prime numbers and which are multiples. Exercises of this sort teach pupils not only to recollect with ease, but also to use the truths recollected.\*

In his efforts to get variety in the manner of repetition without changing the substance, the teacher should employ the various senses whenever this is possible. The ear, the voice, the eye, the hand, may often be exercised about the same matter. The effect of using more senses than one is in itself a capital thing for the memory. The idea formed by the action of the two senses is stronger than that formed by the action of one. To test this you may try the experiment of seeing how much of a printed sentence you can take off by reading it to yourself and then writing it without book and how much you

\* We must not forget however that brain-work takes time, and no one without experience in teaching would believe how often the mind has to connect  $9 \times 6$  with 54 say, before the first immediately suggests the task. The necessary amount of repetition could perhaps hardly be secured if we always associated brain-work with it.

\* This method has been developed and worked with remarkable success by Mr. E. J. Marshall, Head-master of the Brighton Grammar School.

similarly take off when you read the passage aloud. You will find that the eye and ear together are stronger than the eye alone.

We next come to association of ideas, which, as James Mill long ago pointed out, is a powerful instrument in the hands of the thoughtful educator, for by this association of ideas one idea, as a matter of course, suggests another and the mind tends to form established trains or sequences. These sequences are under the influence of custom, of pleasure, and of pain; and all these depend in some measure on the educator. As we are now considering the memory only I will not discuss the larger question of habit, which is a result of the tendency in both mind and body to act in established sequences; but in passing I cannot help remarking on the folly of associating in the minds of children pain and disgust with the things which we wish them to become attached to. As Locke says, the very sight of the cup from which we have been accustomed to take nauseous physic is unpleasant to us, and we can relish nothing we drink out of it. Why, then, do we so often make books instruments of torture to children, especially the children of the poor, if we do not wish them to hate the sight of a book all their lives? Why do those who love religion so often inflict tedious religious services on children unless they wish the children to shun religious services as soon as they are their own masters?

But this by the way. We are considering association of ideas as a help to memory. The singular ease with which the mind runs along established trains may be readily tested by saying the Alphabet forwards and then trying it backwards. I do not know, by the way, why this particular train is so well established in all of us, unless it be that it was one of the first sequences of any length to which the mind became accustomed.

Now our knowledge, in order to be of any use to us, must not lie in the memory a mere pile of isolated facts, but must be worked up into trains along which the mind will work without effort. In the words of an old writer: "There are persons who have laid in vast treasuries of knowledge which lie confusedly and are of no service to them for want of proper clues to guide into every spot and corner of their imagination; but when a man has worked up his ideas into trains and taught them by custom to communicate easily with one another, then arises order, and he may reap all the benefit they are capable of conveying; for he may travel over any series of them without losing his way and may find anything he wants without difficulty."—[Abraham Tucker's *Light of Nature*.]

We see now how the teacher may strengthen the pupils' memory. He must not require them, as the authors of most school-books do, to perform the *tour de force* of committing to memory a huge number of disconnected facts, but he must awaken in them a perception of all the connecting links between what is already known and what is to be remembered. Mnemonics, as you know, give purely arbitrary connexions between the things to be remembered. This sort of connexion is better than none at all, but it is far inferior to connexions which lie in the things themselves. When anything new is to be received, the pupils should be led to compare it with what they already know and to mark similarities and differences. Too often pupils are raced along and made to acquire imperfectly, by sensational memory, only a large quantity of sonnets; and similarities which might be a

great assistance to them become a mere source of confusion. *E.g.*, a boy learns the verbs in the Latin grammar from the beginning of the active of *amo* to the end of the passive of *audio*. In this case things which should be for his wealth prove an occasion of all falling, for the similarity between the conjugations and between active and passive voice, lead to all kinds of wrong combinations. But if the active of *amo* is made familiar to the learner and he has then to learn the passive of *amo* or to go on to the active of the next conjugation, he may compare what he knows with what he has to learn, and by this means may materially lighten his labour. Schoolmasters in large schools have a similar experience in remembering boys. If two boys a good deal alike enter the school at the same time, the masters often go on confusing the one with the other; but if a boy enters the school who is a good deal like another whose face has already become familiar, there is no confusion, because the masters think of him as the new boy who is so like the boy they already know.

Before I quit the subject of connexion of ideas, I must give a caution which we all stand in need of. By the time we have grown up we have formed in our minds all kinds of trains of ideas, and by habit we have got to think of these associated ideas as if they were one simple idea, and hence we attribute to other people, often indeed to our pupils, the possession of the whole connected series when they have but a part. We expect them, too, to keep up with us when we are going along a well-worn high road and they are, so to speak, on the other side of the hedge and have to scramble along over a very rough country. A little more knowledge of the operations of the mind would cure a good deal of the schoolmaster's impatience.

The last of the three A's, Arrangement, is closely related to the second, Association. When things are well arranged the mind can form good trains of ideas, and natural connexions, as I have said, are far better than artificial, indeed memory of real connexions is the memory of great intellects, memory of isolated facts is the memory of idiots. Very great care then should be taken by the teacher to put the different things to be retained in a good order. In Thos. Tate's "Philosophy of Education" is the following story which well illustrates the power of arrangement in assisting the memory:—

"Betty," said a farmer's wife to her servant, "you must go to the town for some things. You have such a bad memory that you always forget something, but see if you can remember them all this time." "I'm very sorry, ma'am," says Betty, "that I have such a bad memory, but it's not my fault, I wish I had a better one." "Now mind," said her mistress, "listen carefully to what I tell you. I want suet and currants for the pudding." "Yes, ma'am, suet and currants." "Then I want leeks and barley, for the broth, don't forget them." "No, ma'am, leeks and barley, I shan't forget." "Then I want a shoulder of mutton, a pound of tea, a pound of coffee and six pounds of sugar. And as you go by the dressmaker's tell her she must bring out calico for the lining, some black thread, and a piece of narrow tape." "Yes, ma'am," says Betty, preparing to depart. "Oh, at the grocer's, get a jar of black currant jam," adds the mistress. The farmer who has been quietly listening to this conversation calls Betty back when she has started and asks her what

\* I have not quoted with verbal accuracy.

she is going to do in the town. "Well, sir, I'm going to get tea, sugar, a shoulder of mutton, coffee, coffee—let me see, there's something else." "That won't do," said the farmer; "you must arrange the things, as the parson does his sermon, under different heads, or you won't remember them. Now you have three things to think of—breakfast, dinner, and the dressmaker." "Yes, sir." "What are you going to get for breakfast?" "Tea and coffee and sugar and jam," says Betty. "Where do you get these things?" "At the grocer's." "Very well. Now what will be the things put on table at dinner?" "There'll be broth, meat, and pudding. Now what have you to get for each of these?" "For the broth I have to get leeks and barley, for the meat I have to get a shoulder of mutton, and for the pudding I must get suet and currants." "Very good. Where will you get these things?" "I must get the leeks at the gardener's, the mutton and suet at the butcher's, and the barley and currants at the grocer's." "But you had something else to get at the grocer's?" "Yes, sir, the things for breakfast—tea, coffee, sugar, and jam." "Very well. Then at the grocer's you have four things to get for breakfast and two for dinner. When you go to the grocer's, think of one part of his counter as your breakfast table, and another part as your dinner table, and go over the things wanted for breakfast and the things wanted for dinner. Then you will remember the four things for breakfast and the two for dinner. Then you will have two other places to go to for the dinner. What are they?" "The gardener's for leeks and the butcher's for meat and suet." "Very well. That is three of the four places. What is the fourth?" "The dressmaker, to tell her to bring out calico, thread, and tape for the dress." "Now," said her master, "I think you can tell me everything you are going for." "Yes," said Betty, "I am going to the grocer's, the butcher's, and the gardener's. At the grocer's I am going to get tea, coffee, sugar, and jam for breakfast, and barley and currants for dinner. But then I shall not have all the things for dinner, so I must go to the butcher's for a shoulder of mutton and suet, and for leeks to the gardener's. Then I must call at the dressmaker's to tell her to bring lining, tape, and thread for the dress." Off goes Betty and does everything she has to do. "Never tell us again," said her master, "that you can't help having a bad memory."

I hope I have by this time shown you that even such imperfect science as we have, ought to influence practice in the school-room. We have seen that there are different kinds of memory. The sensational action of the brain has its memory, and the intellectual has its memory. We have our choice, to some extent at least, which kind of memory we will develop in our pupils, and we mostly develop that which works easiest, the sensational. Science would teach us that this is wrong, and that we should endeavour to make intellectual memory take the place of sensational. Next we found that the mind has two very distinct powers which may be called the carrying and hoarding power. The carrying power has its uses in special circumstances, and can never be neglected so long as there are examinations to prepare for; but the hoarded power is one of the principal faculties of the mind, for the intellect without a hoarding treasure of truth works to as little purpose as a flour-mill with no corn in it. The mind then must be taught not how to carry, but how to hoard; and

for this purpose we must cultivate its interests, we must accustom it to continued attention, we must teach it how to arrange its ideas and connect them in trains so that one idea may call up others bearing on the same subject.

Perhaps the gist of what I have said will be seen most clearly if we take a subject and see how the previous considerations will affect the teaching.

Learning poetry has always occupied a large place in the curriculum, though till quite lately the poetry learnt in our great schools was nearly all of it Latin. Has any attempt been made to secure the right sort of memory in this case? Very seldom, I believe. We always go back to our own boyhood and make our own experience the test of the general experience, and adopting this plan I call to mind the time when on joining a new class I began in the middle of Gray's Ode and learnt:

"Alas, regardless of their doom,  
The little victims play;  
No thought have they of ills to come,  
No care beyond to-day."

I very well remember puzzling myself by trying to think who the little victims could possibly be, what their doom was, and why they didn't mind it. Still in this case I hoarded the words, and some eight or ten years afterwards I managed to attach some meaning to them; but on being moved to a public school I found that the carrying power was the truly valuable one. I wanted to get my remove, and I found my getting it would depend in a great measure on the quantity of Ovid I could say by heart. I therefore managed to carry in my head for a little while a great quantity of verses, of which I never attempted to construe a dozen. I got them up by parrot memory only: they were nothing but sounds, and oddly enough it was an understood thing that we were not required to know the meaning! In this case great importance was attached to memory, but to memory of the wrong kind. At another public school (Winchester), in days gone by, there was an attempt made to cultivate both the hoarding and the intellectual memory by the following expedient:—In every examination while he remained in the school a boy might take up the Latin and Greek repetition which he had prepared for the first and subsequent examinations, so that he gained a store which was kept and increased as he went up the school. Thus the hoarding memory was encouraged. Besides this, he was not allowed to say anything that he could not construe, so here was some precaution taken against mere sensational memory. In a little book published some years ago by the Rev. Henry Fearon, he says that he knew at Winchester a boy who could construe and repeat 14,000 lines from Latin and Greek poets.

This Winchester plan had some very good points in it (why it was abandoned I know not), but as the boys were left to learn up the repetition in their own way the great probability is that in learning by heart they had little consciousness of the meaning, for both young and old have a tendency to avoid thinking when possible; and in a foreign language the sounds do not so readily suggest ideas as in our own language.

To be continued.

## APPOINTMENTS.

From 15th February to 15th March 1878.

M. V. Narayana to be 3rd Master, Anglo-Vernacular School, Guntoor, on Rs. 30 per mensem.

J. Pullaya, to be 2nd Master, Anglo-Vernacular School, Guntoor, on Rs. 40 per mensem.

The following appointments are made in the Zillah School of Sydapet, with retrospective effect from 1st October 1877.

W. E. Messinier, Head Master, Rs. 200.

T. Streeivasa Row, Assistant Master, Rs. 70.

K. Siagara Charry, Assistant Master, Rs. 60.

H. Venkat Row, Assistant Master, Rs. 30.

C. Muthaswamy Nicks, Assistant Master, Rs. 30.

D. Lutchminarayana Sastri, Assistant Master, Rs. 30.

S. Kuppaniengar, Assistant Master, Rs. 25.

R. Venkatrama Row, Assistant Master, Rs. 20.

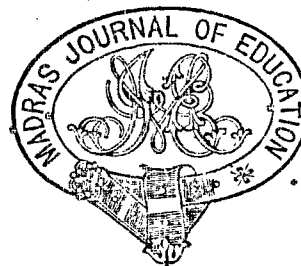
M. T. Balakrishna Mudelly, Assistant Master, Rs. 20.

K. Ramanuja Charriar B.A., to be 6th Assistant Master, Provincial College, Cambracounn vice A.G. Subramania Iyer.

## MISCELLANEOUS.

ENGLISH SPELLING.—A Mr. Turner, who has been studying the beauties of English orthography, wishes it to be understood that desiring not to be mingled up with the vast supply of Turners, he will be henceforth called Mr. "Phtholognyrch," which he says is not a change but a distinction, for First—Pth (as in phthisis) is T; second olo (as in colonel) is UR; third —ga (as in quat) is N; fourth—nyrch (as in myrrh) is ER; total, Turner.

THE TELEPHONE.—Some very successful experiments were made with the telephone between Aberdeen and Inverness, a distance of 108 miles. Songs and choruses were distinctly transmitted, and conversation was carried on at times, with marvellous distinctness, notwithstanding the weather was unfavourable. The experiments were made with Professor Bell's instruments.—Professor Bell delivered a lecture on the telephone before the Physical Society of London. In the course of his address, he said that 258 miles was the longest distance at which he had carried on conversation, although he had conversed through several thousand miles of wire. He had heard the breathing of a man 149 miles off. Within the last few days the telephone had been successfully tried between England, Guernsey, and France.—The telephone is about to be applied to mining industry at Charleroi (Belgium), and experiments are shortly to be tried at other pits in the neighbourhood of Gosselies.—A number of interesting experiments with the telephone were also made at the Brighton Aquarium, the general manager, Mr. Smith, having arranged for the hanging of one of Professor Bell's instruments between his office, at the extreme end of the building, and the band platform at the other end. Under ordinary circumstances, the music of the band, which was then performing, is inaudible, owing to the distance and the peculiar nature of the building, but with the assistance of the telephone, the music could be distinctly though faintly heard. A more accurate effect was, however, secured by one of the band playing *al piccolo* close to the farther mouth-piece, when the performance could be clearly followed. A number of visitors used the instrument, keeping up a conversation with their friends, and considerable interest was manifested at the remarkable equality of the machine, in not only reproducing the sounds, but the facility with which it enabled the owner of the voice to be recognized. The apparatus was placed *ad libitum* in a few minutes, the only arrangement consisting in hanging a coil of the telegraph wire along the corridors. It is intended in a few days to place a telephone in communication between Brighton and Eastbourne the telegraph connections being used for the purpose.



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## THE MONTH.

THE great educational events of the month have been the Convocation of the University and the Discussion in the Senate concerning the Vernaculars. The Convocation for the first time was held in the new Senate House with "pomp and circumstance", never before displayed. Dr. Farnell's speech on the occasion we give elsewhere, and we sincerely trust that it may have the effect of turning the attention of more of our native graduates to medicine as a profession. The discussion concerning the vernaculars we are happy to say, resulted in the rejection of the proposition that a classical language should be made to take their places in the F. A. and higher Examinations of the University. Eleven members of the Senate voted for the resolution, and twenty-one against it. The besetting sin of Hindu Scholars is pedantry, and in this fault, a regulation like the proposed, which would tend to make them neglect the Dravidian fountain heads of mother tongues, would encourage them, and would still more separate them from the great masses of their labouring fellow-countrymen whom it is their duty and should be their privilege to educate and elevate. The discussion was very exhaustive and we have therefore the more reason to rejoice in the result.

We have received a copy of Mr. Marcar's Solutions in Plane Trigonometry. The book contains upwards of 450 examples. Several of the Solutions we have tested and found correct and we think the book will be of service to students who resort to it not to save themselves from the trouble of thinking, but to compare the result of their own efforts with the author's. The book has been carefully and neatly printed at the Foster Press.

The Society for the Propagation of the Gospel in England have drawn up the following Principles and Rules for the guidance of the Superintendents of their Indian Schools:—

*Principles.*—"I. That, forasmuch as the schools supported by the S.P.G. should be carried on for the conversion of the Unbaptized, as well as for the education of the Baptized in the Christian faith, all the Scholars ought to receive instruction in the doctrine of our Lord Jesus Christ."

"II. That the privileges of the Baptized ought to be always kept distinctly in mind, and put definitely and practically before both Heathen and Christians, whether children or adults."

"III. That religious instruction ought not to be given by an Unbaptized Teacher."

*Rules.*—"I. That in mixed schools of Baptized and Unbaptized, provision be made for the separate religious instruction of Scholars by the Missionary or by a Christian Teacher."

"II. That as soon as the converts are sufficiently numerous, separate schools be established for Baptized and Unbaptized."

"III. That in schools attended by both Baptized and Unbaptized, the latter, whether Teachers or Scholars, be not present while the Christians are at prayer, save on their own spontaneous request, and with the express permission of the Missionary or his representative."

We are glad to learn that a club, called *The Grenville Club* has been formed for the more general establishment of a mutual and intelligent sympathy among Anglo-Indian young men in Madras. It has been often regretted that no institution exists in Madras in the nature of a Club of refined tone, where the young men of our Colleges and public offices might meet and spend their hours of leisure in congenial companionship and with mutual profit and enjoyment.

Such a want *THE GRENVILLE CLUB* aims at meeting. It contains a Library and a Debating and Reading Room, where the local Journals and some of the best English Journals and Magazines may be seen. Means of amusement are afforded in Tennis and Badminton Courts, and a Billiard Table is also to be obtained.

We regret to learn that Pachiappa's School has so soon lost the services of Mr. Flanagan, but it is not to be expected that the managers can secure a really good Head Master without offering suitable remuneration. This the Trustees of so rich a charity as Pachiappa's can very well afford to do, and it is disgraceful that the post of Head Master of a school of this importance should for so long a time have not been filled up.

The 'Syndicate have published the subjects chosen in the various languages except English for the Matriculation Examination of 1879. We here give them:—

MATRICULATION—1879.

English.

Selections to be published by the University.  
Sanskrit.

Hitopadesa—Book I.  
Ramayana—Bālakāṇḍa, 16 to 56 Sargams.

Greek.

Homer—Iliad, Lib. I.  
Xenophon—Anabasis, Lib. I, II.

Latin.

Vergil—Æneid, Lib. V.  
Sallust—Bellum Jugurthinum, from the beginning of Ch. I to the end of Ch. LVII (the words "boni atque ignavi erant.")

Arabic.

Ikwān-us-Safā—Six Messengers.  
Alf Laila—Nights 1 to 30.

Persian.

Baharistan-i-Jami—First half.  
Lā, āli-i-manzumah—sixty-eight pages.

Tamil.

Nala Venba—From Stanza 131 to the end.  
Nānmani Kadigai—From Stanza 51 to the end.  
Rasselas—First fifteen chapters.

Telugu.

Nirvachana Uttara Rāmāyana—Canto 5.  
Julius Caesar—First two Acts.  
Life of Lord Clive.

Canarese.

Bhārata—Udyogaparvam—fourth, fifth, sixth Sandhis.  
Lathā Sangraha—pp. 314 to 388, both inclusive.

Malayalam.

Panchatantram—Tantram I.  
Muhammad Charitram—From page 21 (printed at St. Thomas' Press, Cochin.

Urdu.

Gulistan—second and third Chapters—(S. E. V. E. S. Edition).  
 Masnavi-i-Hasan (Government Book Depot.)

Urdu.

Hitepadésu—(Calcutta School Book Society's Edition).  
 Sutton's History of Orissa—Part I (do).

(The subjects for the Higher Examinations will be given next month).

### HORACE'S ODES, BOOK II.

#### ODE I.

By REV. G. J. POPE, D.D.,

Warden of the Bishop Cotton Schools and College, Bangalore.

#### TO CAIUS ASINIUS POLLIO

No ode in Horace is more suggestive than this. The best commentary on it is the spirited history of Florus (IV. pp. 79-89 in Halm's edition). The Epitome of Florus with some faults is the best "Primer of Roman history."

Pollio is about to publish a history of the civil wars. Horace has been admitted to a private reading of it. It is graphic and dignified.

Pollio is himself a writer of tragedies, a distinguished advocate, a speaker of weight in the Senate, and has gained laurels in a war against the Parthini, on the borders of Dalmatia. For his history, see Merivale, vol. II, p. 418, &c.

#### Alcaics.

Strife's seeds what time Metellus was consul sown,  
 War's hidden springs, its errors and modes diverse,

The sport of fickle fortune, fateful

4 Friendships of chieftains and arms besmear'd  
 With blood of victims slain, unatton'd for yet:  
 These themes you choose, work doubtful and dangerous,

And tread with stately step mid embers

8 Hot with the smouldering fires deceitful.  
 Brief space the tragic muse with her mien severe  
 Our stage abandons; soon, when the order'd tale  
 Of strife is told, your nobler function

12 Rids you resume the Athenian buskin,  
 O Pollio, noted stay of the sad accus'd ones.  
 Sage counsellor, when senates debate perplex'd,  
 For whom the laurel bore eternal

16 Honours, in triumphs Illyrian gather'd.  
 Already horns' blare deafens our startled cars;  
 War's terrors spread already the clarions shrill;

Now gleaming arms affright the fleeing  
 20 Steed and the face of the daunted horseman.  
 Now sees my mind's eye, forms of the mighty chiefs,  
 All fill'd with glorious dust of the battle field  
 And all the earth subdued and yielding,—

24 All save the soul of unconquer'd Cato.  
 Juno, with each god friendly to Afric's cause,  
 Tho' powerless erst, she left unaveng'd the land,  
 Has brought at length the Victors' grandsons.

- 28 Offerings due to Jugurtha's manes.  
 What plain attests not, rich with Italian blood,  
 By mounds sepulchral, impious conflicts urg'd?  
 Nor heard the crash of Roman ruin  
 32 Edged by Parthia's distant regions?  
 What ocean tide, what river that rushes adown,  
 Knows not the sadd'ning tale of these wars? What—  
 Has not the Roman slaughterer redd'nd?  
 36 Where are the shores by our blood unstain'd?  
 But froward Mæse, sad strains of the Cæan bard  
 Try not, nor cease thou singing thy sportive song;  
 Come frame in grot to Venus sacred  
 40 Measures of lightward foppier import.

#### BOOK II, ODE 3.

Quintus Dellius, to whom this Ode is addressed, is called by Messala Corvinus in Seneca, "desultor bellorum civilium," the *vaultor of the civil wars*, from the nimbleness with which he changed sides, as each became superior. He was afterwards an intimate friend of Augustus and of Maecenas. As such, Horace dedicates an ode to him; but there is no indication of special friendship.

There is even a hint, that Dellius is hastening to the land where his unscrupulous adroitness cannot avail him. For line 26, comp. Aeneid VI, 432.

The themes are favourite ones of Horace: moderation and the certainty of death.

A splendid bit in Ovid's Met. X, 32-35 is, apparently, an imitation of the last stanza of this powerful ode.

Orpheus, seeking Euridiké, goes down to Tartarus, and thus addresses the rulers of those gloomy regions:

"Omnia debentur vobis, paulum que morati  
 Serius aut citius sedem properamus ad nium,  
 Tendimus huc omnes, hæc est domus ultima, vosque,  
 Humani generis longissima regna tenetis."

The metre is *Alcaic*.

- 1 Remember even mind in the troublous times  
 To keep, nor less, still calm in the joyous hour,

Restrain'd from insolent exulting,

- Dellius, mindful of death's approach,  
 5 If sad thou spendest life in the gloom uncheer'd  
 Or thro' the festive days in the grass reclin'd  
 Remote from cares thou take thy pleasure  
 Choicest and oldest Falernian quaffing.  
 9 Why throw the mighty pines, and the poplar pale  
 Their grateful shade with boughs overarch'd above,  
 Why strive the brook's swift eddying streamlets  
 Hurrying over their winding channels?



- 13 Bid hither bring wine and the unguents rare;  
Bring pleasant rose-wreaths fading away too soon,  
While life's affairs and youth and fateful  
Threads of the Sisters may yet permit thee.
- 17 Thou shalt depart from glades of thy wide domain,  
From home and mansion lar'd by the yellow stream,  
Thou shalt depart, thy heap'd up treasures  
Leaving for hands of thy heir to lavish.
- 21 What skills it if from Inachus old thou sprang'st  
Wealth's heir, or poor dweller, neath open sky  
Of lowliest race thou art,—a victim  
Doom'd of the ever un pitying Orans.
- 25 All move to one goal driv'n by the waad of fate;  
One urn contains all lots, to be drawn forth each,  
Or now or then, and bid us enter  
Boat that shall bear into endless exile.

## BOOK II, ODE 6.

This ode is addressed to Septimius, a Roman Knight, whose name derives additional interest from the elegant Epistle, (Ek. I, 9), in which Horace introduces him to Tiberius.

Odes 7 and 17 of the First Book in some respects illustrate this.

Horace addresses his friend, Septimius, who would go with him to the ends of the earth. The Poet desires to spend his last years in Tibur. If this may not be, then the country around Tarentum, has the greatest charms for him. There his friend may perform his exequies.

## The metre is Sapphic.

- 1 Leal Septimius, thou with thy friend to Gades  
Would'st along; or where the untam'd Cantabrian  
Dwells, or Syrtes wild, where the Moorish billow  
Ever is raving.
- 5 Tibur's pleasant seat by the Argive founded  
Be my rest when age has enfeebled nature,  
Be my goal, I pray, weary of land and ocean,  
Weary of warfare.
- 9 Which if Fate unkind to my vows deny, then  
Sweet Gulaesus' stream, to the flocks of skin-clad  
Sheep so dear, and lands will I seek of Spartan  
Ruler Phalanthus.
- 13 Laughs that nook for me, in its rich abundance  
Passing far all lands, where the honey yields not  
Palm to rich Hymettus, and olives rival  
Fruits of Venafrum.
- 17 There the longest spring and the mildest winter  
Jove bestows. There, friendly to fertile vineyards  
Vales of Anlon wind, and the clusters vie with  
Fruits of Venafrum.
- 21 Thee and me that spot with its blissful uplands  
Claims; and there thy tears on my glowing ashes  
Sprinkled due shall fall as the tribute paid to  
Minstrel beloved.

## BOOK II, ODE 10.

If, as seems probable, the Licinius here addressed is Licinius Murena, (sometimes called Varro Murena), brother of Caius Proculeius and of Terentia, wife of Maecenas, the judicious warnings of Horace were in vain.

He was a turbulent and ambitious man, and being involved in a conspiracy with Fannius Caepio was put to death, A. D. 21. Yet he had many good qualities, and was not unworthy to be Horace's friend.

For Velleius Paterculus says of him: "*L. Murena et Fannius Caepio, diversis moribus, (nam Murena sine hoc facinore potuit videri bonus; Caepio et hoc ante erat pessimus) cum viderent occidendi Caesaris consilia, oppressi auctoritate publica quod vi facere voluerant, jure passi sunt.*" II. Cap. 91.

See also Merivale's Roman history, III. p. 452.

The topic of this Ode is a favourite one with Horace. By his words and by his example he always recommended moderation and contentment.

The "*oreu mediocritas*," the golden mean of the poet, has become a household phrase.

This is the *μεσότης* so famous in Aristotle.

His saying: *δ μέσος βίος βέλτιστος*, 'the middle life is the best,' is our Poet's text.

Ovid's Phaethôn is a forcible illustration of it: "*medio latissimum ibis*," says the Father to his too ambitious son. Metam. II, 137.

So the story of Icarus, which Ovid has three times told, enforces the same moral. Comp. Ov. Ars. Amat. II, 40.

This is not one of Horace's most poetical odes. A familiar idea is enforced in terse language and with apt, though not original, illustrations.

The F. A. student, for whose help these papers are written, may compare the passages noted below, as they illustrate the same ideas, but with remarkable diversity of manner.

|                              |                                |
|------------------------------|--------------------------------|
| Ode. Lib. II, C. XVI, 13—16. | Ode. Lib. IV, C. IX, 31—52.    |
| " " C. XVII, passim.         | Sat. Lib. I, Sat. I, 106, 107. |
| " " C. III, 1—4.             | " " VI, 92—131.                |
| " " C. II, 9—12.             | " Lib. II, " II, 107—111.      |
| " " III, C. I, 5—48.         | Epist. Lib. I, Ep. XII, 1—20.  |
| " " C. XVI, 17—44.           | " " Ep. XVI, 63—68.            |
| " " C. XXIV, 62—64.          | " Lib. II, Ep. II, 190—202.    |
| " " C. XXIX, 41—56.          |                                |

Once for all let me also advise the student to get Mr. Theodore Martin's "Horace" in the series of classics for English Readers. Let him master this volume.

1.  
Better, Licinius, not rashly to steer,  
Tempting the deep in your headstrong career,  
Nor yet hug the shore, of the tempest in fear,  
In quicksands abounding.

2.  
He who the golden mean soberly loves  
Free from the squalours of indigence moves,  
Scapes too the envy the proud palace proves,  
Extremes safely shunning.

3  
Pines that are highest feel most the storm dashing;  
Towers that are proudest fall heaviest crashing;  
Crown'd crests of hills fierce lightnings feel dashing,  
And scathing their verdure.

4  
Hearts that wisdom's sobering power obey,  
Hope still in darkest hour for brighter day,  
Fear in sunniest skies the changeful ray,  
For every lot ready.

5  
Jove brings wintry blasts, deforming the fields,  
His power too lays them: grief soon to mirth yields,  
Not always Apollo his vengeful bow wields,  
But wakes his lyre often.

6  
Show thee a hero in time of thy woe!  
Wagely, when winds of adversity blow,  
Draw in thy sail, lest too rashly thou go,  
Where breakers may wreck thee!

### CORRESPONDENCE.

#### CHESTER'S NOTES ON PHYSICS.

TO THE EDITOR OF THE MADRAS TIMES.

Letter No. I.

SIR.—The latest number of the *Madras Journal of Education* contains a lengthy notice of my *Notes on Physics* but the review is so full of errors that I am desirous of proving to the public that even a critic may sometimes make mistakes, and find faults where there are none, especially when his avowed object is "to do all he can to discourage the sale of the book."

I would not have noticed the article in question had it not appeared in a respectable Magazine, and one that is considered an authority on educational matters. To quote from the *Journal*:—

"It used to be thought that a person should have mastered a subject before he began to write upon it, but, in Madras, the idea prevalent amongst a large class of people, seems to be the very reverse of this." I shall prove that these remarks may be applied with perfect justice to the reviewer himself.

Not to take up your time, I shall notice only a few of his criticisms. His first charge against me is that my *Advertisement* of the book was in bad English. Perhaps the critic is able to write better, but as he has not pointed out any violation of the rules of grammar, I shall not trouble to answer him on this point. What I want to draw attention to is that a new style of criticism has been inaugurated. A book is judged by the publisher's advertisement and not by its intrinsic worth! If this example is imitated, what a number of books will be condemned unread.

I must here admit, that I was mistaken in saying that Iridium is the densest body; the error was discovered too late to admit of correction in the first edition of my book. The reviewer finds fault

with the rule given for finding the specific gravity of a body lighter than water. If he will turn to *Fourné's Chemistry* he will find that I have simply followed the directions there given. Again, he objects to my description of the siphon, forgetting that the description in question is placed under quotation marks, and is from Prof. Baifour Stewart's larger book on Physics.

Here is another of the critic's blunders. I stated in my book that, according to Fahrenheit's scale, there are  $180^{\circ}$  between the freezing and the boiling point, according to the centigrade scale  $100^{\circ}$ , and according to Reaumur's  $80^{\circ}$ , and in giving the rule for changing the degrees of one scale into those of another, I said that "the relation between the degrees Fahrenheit, Centigrade, and Reaumur is expressed by the numbers 9,5,4." This according to the reviewer, is wrong. Let him turn to page 276 *Roscoe's Chemistry*, and he'll find the same remark. So much for his superior knowledge!

In another place he objects to my statements that 'a weight falls 16 feet during the first second of time,' and that 'steel is the strongest metal.' The *Physics Primer* (the prescribed text book) contains the very same assertion in the very same words.

I shall not point out any more of his blunders, for I think sufficient proof has been given that the person who wrote the review was totally unqualified to criticise a work on Physics. It is strange that the Editor of the *Journal of Education* should have permitted such an article to appear in his columns. The next time the gentleman who does the reviewing for the *Journal* puts pen to paper, let him first ponder over his own words—'A person should have mastered a subject before beginning to write upon it.'

I remain, &c.

BEN. H. CHESTER.

Madras, March 25th.

[We are reluctant to open our columns to a letter replying to strictures in another publication, but seeing that a month intervenes between the issues of the *Journal of Education*, we allow Mr. Chester's defence of his little book to appear. We cannot, however, afford space for discussion.—Ed. *Madras Times*.]

#### CHESTER'S NOTES ON PHYSICS.

TO THE EDITOR OF THE MADRAS TIMES.

Letter No. II.

SIR,—As you have inserted a letter from Mr. Ben. Chester in defence of the accuracy of his little book, and as such a question is of importance to the teaching-public, as well as to students for Matriculation in the University, I trust you will allow me space for a few remarks on the subject.

I have not seen the review referred to in the *Journal of Education*, but that Mr. Chester seeks to defend the accuracy of his book simply confirms me in the belief that he knows nothing about the subject in which he pretends to be a guide. My knowledge of Physics is not of such recent acquisition—quite—as Mr. Chester's, and it is of a more practical character; for evidently Mr. Chester has never seen nor handled much or any of the physical apparatus referred to



hour, His Grace the Governor the Chancellor of the University—having previously spent a few minutes with the Architect in admiring the beauties of the place—the Vice-Chancellor (Mr. Justice Innes), and about thirty Fellows, headed by the Registrar, Mr. D. Duncan, M.A., walked in procession from the room where the Syndicate meets, in the gallery at the northern end, to the dais at the south. Immediately on taking his seat, His Grace declared the Convocation open, and the Registrar read the names of the candidates for degrees. There were two candidates in Civil Engineering, one in Medicine, one Master of Law, eight Bachelors of Law, and fifty-two Bachelors of Arts. These were all duly asked whether they would be honourable and faithful to the professions they were about to enter, and were then each presented with a diploma and their robe. This over, and the names having again been recited by the Registrar, His Grace the Chancellor called upon the Principal of the Medical College to deliver the usual address.

DR. FURNELL said:—My Lord Duke, Mr. Vice-Chancellor and Gentlemen,—*Salus populi est suprema lex.* It is customary to close this interesting Convocation at the Madras University with an address from one of its Fellows, and we owe it to the practical sagacity of our most noble and distinguished Chancellor, of which since his advent to power over us we have had so many examples, that on this occasion it is delivered by a Physician. You can well believe me when I say that when I remembered the many eloquent orations that have been heard on these occasions, especially from members of the Bar, whose vocation it is to speak, and speak well, I might, and did, shrink from accepting the rôle of Public Orator. Yet when the reason of the choice was made plain to me, that each profession, especially of those engaged in teaching the youths of this country, should, in turn, say what it had to say on Education,—give as it were its "*raison d'être*," I hesitated no longer.

It is befitting that on this the first day of our assembly in this Hall, I should congratulate the Senate of this University in having, as last, found a home worthy of its reputation in a Temple erected by one of its Fellows, which adds to the list of magnificent edifices by which he has gradually changed the features of our city, and, although some of us who have gazed upon the Taj could wish, at the risk of being deemed hypercritical, that the domes of this building partook somewhat more of the aerial gracefulness of those seen in that marvellous structure—revealed more of themselves, and less of their supporting columns—yet must we give our unqualified admiration of the rest of this beautiful building, and especially of the noble room wherein we are now assembled. I have been long enough in Madras to remember what the style of our public buildings was before Mr. Chisholm came amongst us, and when we contrast this Senate House, the Presidency College and the Railway Station, to say nothing of other buildings, with the old stereotyped structures of the Département Public Works, the Madras University may well be proud that one of its Fellows has added so much to his own and their reputation by his beautiful science. And the situation of this building seems to me so happily chosen, so full of the highest auguries. It is almost the first, if not the very first, building of any consequence in this continent which catches the rays of the rising sun, as if southern India greeted the glorious God of day

—bathed also of old as the God of Learning—with a building consecrated to his beloved pursuits. Let us hope the influence of this University may be as benellicent and lasting, and that, like the luminary whose advent it daily greets, it may shed a never-failing stream of intellectual light over the land, chasing away the darkness of ignorance and superstition.

Some twenty years ago, when this University was first called into existence, and for years after, it was customary on these occasions to hold forth on the advantages and delights of learning as an inducement to the youths of this country to come forward and fill our Colleges. To do so now would be, I feel, an act of supererogation. There is no need for us now to go into the bye-ways and hedges for guests to fill our banquets. Each year sees an ever-increasing number of candidates for matriculation and graduation in Arts, but I fail to notice any increase for degrees in medicine—a matter, I see, on which our gallant and respected Director of Public Instruction touched upon in his address last year. In twenty years the faculty of medicine has produced three Doctors, half a dozen Bachelors, and one Licentiate in a population numbering some 50,000,000 of people! Some future Historian looking at these figures might jump at the conclusion that this continent, during the commencement of the 19th century, was singularly fortunate as regards health, and that the fell pestilences which in some other parts of the world proved so disastrous, were here unknown. Yet what a fallacy such a conclusion would be! As the Principal of the Medical College, this fact is of singular interest to me, and it has often, been present to my mind, not only that the number of Native students who presented themselves to study medicine, apart from those entering the service of Government, was singularly small, but that the Brahmins practically held altogether aloof. What was the cause of this? If we turn to the ancient History of India, we find that medicine, far from being a despised science, was one of the most honoured. Next to the vocation of Priest, that of the Doctor seems to have been the most respected. Nay, I am not sure it was, in the most ancient times, second even to that of the priest, for I find in your ancient books that one of the fourteen ratnas or precious objects which the gods produced by churning the Ocean after the deluge was a "Learned Physician." In the Mahabharata is an account of this ocean churning for the recovery of lost treasures, and the one most desired and sought for was the Ambrosia which confers life and health. "The gods had failed, but when Ananta, the Serpent King, bid the great snake Vasaki wind himself as a churning cord around the mountain Mandara, all the gods pulled vigorously at the living cord, until from the agitated floods uprose the Moon, and the Goddess Lakshmi; the wise Horse and the wonderful gem called Kanstubha;

And lastly from the troubled waves,  
Amidst the glorious cheering,  
Up rose Dhanwantari the sage,  
The lost Ambrosia bearing.

This was the famous Physician, bearing in his hand a white jug containing the coveted Ambrosia.\* This Dhanwantari is said by some to have obtained the Ayur Veda—the ancient medical record of the

\* Hindu System of Medicine by T. A. Wise.

Hindoo—from Brahma direct, by others to have been instructed in its mysteries by Indra, the God of Heaven, when Dhanwantani practised medicine with great success. But witnessing the ignorance and misery of mankind, he descended upon Earth to cure their maladies and to instruct them in the means of preventing as well as curing diseases. This Dhanwantani became King of Kasi or Benares, the most holy city of the Hindoos—a city well worth the pilgrimage of any one, Hindoo or English, merely to gaze upon. Here he became so famous from his many cures, that, at last, a deputation of divine sages, Munis, waited upon him to petition instruction in the divine art of Medicine. "Deign Sovereign ruler," these sages thus addressed Dhanwantani, "to bestow upon us the power of preventing and curing the many diseases under which mankind are suffering, afflicting their bodies, tormenting their minds, and which, with the numerous accidental natural diseases, distress them so much that they seem to be without friends. We pray that you will bestow upon us a work to instruct us in the causes, the nature and cure of diseases: for retaining health and for promoting the welfare of the soul in another world. Like scholars we come to receive the information from you." The King-Doctor's answer was favourable. "Your wishes shall be granted," replied Dhanwantani, and one of the sages, Sasruta, son of Visamitra, a contemporary of Rama, was chosen to be the person to be instructed in Medicine. The Book which Sasruta, from the dictation of Dhanwantani, compiled was an abridgement of the Ayur-Veda, that itself being far too voluminous and heavenly for the present degenerate race of mankind! but if I understand my authorities correctly, Sasruta's work is still preserved, and is still a high authority among good Hindoos. I will not take up your time in describing the work at any length, but I wish to draw your attention to this curious fact, that the 3rd Book treats of Anatomy and gives a description of the body, and I learn from it that your present prejudice against dissection had no existence in those good old times when kings and sages were doctors. Sasruta enjoins that "the teacher shall seek to perfect his pupil by the application of all expedients which he may think calculated to effect his proficiency," and he gives directions for the use of instruments. Again, he writes: "Those men who, in ignorance of the human frame, venture to make it the subject of their experiments are the murderers of their species." Charaka, who in the opinion of some is even more ancient than Sasruta, writes: "A Practitioner should know all the parts of a body, both external and internal; and their relative positions with regard to each other; without such knowledge he cannot be a proper practitioner." What says Menn your great Lawgiver: "Should a Brahmin touch a fresh human bone, he is purified by bathing, and if it be dry, by stroking a cow, or looking at the sun, having sprinkled his mouth duly with water." It is evident the great law-giver passed no prohibition on the matter. I find also that in Bengal the opinion of learned Pandits was given on this point in Lord William Bentinck's time, and the Shastras made to declare that "Dissection was permissible to Brahmins seeking Medical Knowledge." My own opinion had always been that this was the insuperable bar to the study of our Western Science of Medicine by good caste Hindoos, and I had commenced some time ago a paper on this subject for submission to Government.

recommending that Brahmins wishing to study Medicine might be excused the study of Practical Anatomy. And yet it would seem that your holy Vedas hold no such prohibition, and that this, like many other superstitious—and I use the word with all respect—has grown up in these later and more degenerate days of your religion. What a strange subject this for reflection that we, who pride ourselves in having quite lately overcome this prejudice of humanity—for it is only in the commencement of this present century the study of Anatomy has become legal in Great Britain—should have been anticipated by natives of this country some three or four hundred years ago, and that I, a humble representative of the Western Aryan races, should stand here trying to persuade you to go back to your old ways of knowledge! Verily! Verily! saith the Prophet. "The thing that hath been, is that which shall be; and that which is done that which shall be done; and there is no new thing under the sun."

But we are not obliged to trust merely to the fabled legends of Hindoo Mythology for the assertion that medicine in this country is an old and honored science. When the Greeks came to India with Alexander, they found amongst the traces of civilization, which raised their astonishment and admiration, the practice of medicine far advanced. Thus Arrian informs us, "The Grecian Physicians found no remedy against the bites of snakes; but the Indians cured those who happened to fall under that misfortune." And again Nearchus informs us, "Alexander, having all the most skillful Indian Physicians about his person, caused proclamation to be made throughout the camp, that whoever might be bitten by one of these snakes, should forthwith repair to the Royal Pavilion to be cured." This was 300 years before Christ, and now in 1878, more than 2,000 years after, we have the Government of India and Dr. Shortt vainly offering a reward for this precious but lost knowledge! These Physicians are also said to have made other cures. "If any among them feel themselves much indisposed," says Nearchus, "they apply to their Brahmins, who, by wonderful and even more than human means, cure whatever will admit of it." Not only did the Greeks derive much information direct, during Alexander and his successor's invasion of India, but from the Egyptians subsequently, and they owed their knowledge to some mysterious nation of the East, India no doubt. But our indebtedness to India can be more directly traced somewhat later. When Bagdad, under the Caliphs after the destruction of Alexandria, became the great seat of learning, medicine was cultivated with much diligence and success. Hindoo Physicians were invited to settle in Arabia, and the works of Charaka, Sasruta, and the treatise called Nidarea were translated and studied by the Arabians in the days of Harun and Mansur, A. D. 773. With the great wave of Mussulman conquest which spread along the shores of the Mediterranean, Medicine and Mathematics were brought by the Arabians to Spain and found a congenial home in the Saracenic Colleges of the Iberian Peninsula. The Arabians were not only great Physicians, but famous alchemists, and to their teachings we owe the foundations of those sciences which have now grown to the fair dimensions of Modern Medicine and Chemistry.\* They seem,

\* It has been said, "Whilst the Byzantines obliterated science in Theology the Saracens illuminated it by medicine." (Draper).

however, to have neglected anatomy, and were more particularly famous for the introduction of numerous Oriental remedies. Rhubarb, Tamarinds, Cassia, Senna, Camphor and various other gums, which, as they are entirely the products of Asia, fully attest that their knowledge of remedial measures came from the East.

And what is this art of Medicine, for the study of which your ancestors in far off times were so famous? Which your heroes and your gods cultivated so assiduously, but you deem beneath your notice? It is, I think, one of the fairest and most entrancing of the pursuits which can occupy man's time. The sciences allied to Medicine—Anatomy, Physiology, Chemistry, and Botany—are of endless interest and beauty, and for this reason, that the laws which they disclose are the laws of Nature; and the crowning studies of Medicine and Surgery, which they lead up to, are they not equally interesting? They bring comfort and assistance, after restored health and strength, to suffering thousands of our fellow creatures, and the laws of one, if properly understood and applied, are capable of saving whole nations from epidemics more devastating far than the most fatal wars. Jenner's discovery of vaccination alone has saved more lives than even the victories of Genghis Khan, aye twenty Genghis Khans, have deprived the world of; and chloroform has assuaged more pain than perhaps even the cruel Spanish Inquisition ever inflicted.

I am not romancing. I am making, I believe, no tropes or figures of speech, but talking plain facts. I could call from history examples without number of fair cities and even provinces destroyed and blotted out, from man's ignorance or neglect of what are now the most obvious hygienic laws. Turn to the history of the Middle Ages, and we find one succession of famines and pestilences, pestilences and famines, sweeping over Europe. Come down to times nearer, we find in 1656, 240,000 people were destroyed by a pestilence in Naples alone, and upwards of 400,000 perished in the Neapolitan territories, a comparatively small place. In 1663, pestilence prevailed throughout England, culminating in the great plague which carried off hundreds of thousands until the fire of London, by destroying the dirty, ill-drained and badly ventilated houses, put an end to the pestilence. Now what was the state of things then existing? The celebrated and learned Erasmus, not very long before, in a letter to a physician of Cardinal Wolsey, says of Englishmen, "There is a degree of uncleanness and even filth of which I could have formed no conception. The floors of the houses are commonly of clay, strewed with rushes which are occasionally removed, but underneath lies unmolested an ancient collection of beer, grease, fragments of fish, spittle, excrement of dogs, cats and every thing that is nasty." Was it any wonder we had pestilence and plagues? London of the present day is most probably 30 or 40 times the size it was then, containing nearly 4,000,000 of people, but it is now one of the healthiest cities of the world, and why? Simply because the people have learnt to wash, drain their houses and streets, and use comparatively pure water, for which remains to be done even now. But a wise regard for sanitation has borne ample fruit even of late years; and great epidemics, such as at one time it was periodically visited with—and which were ascribed to the direct manifestation of divine wrath—have practically disappeared.

Am I wrong in saying that a state of things very much as described by Erasmus, if not worse, obtains amongst the dwelling places of many of your towns, and bears practically the same fruit? Need we be astonished at our recurring epidemics of Fever, Dysentery and Cholera? Take this very plague cholera, with which we are too familiar, for is not India its home? It is one of those pestilences, bred of filth and dirt, which should disappear from amongst us. Already it is beginning to show chinks in its armour and has ceased to be the dread, mysterious, unknown, and unconquerable enemy it was in my early days; before which man had nothing to do, but to fling down his arms in abject terror and despair, and pray piteously to an avenging God to pardon him his sins and avert the dread punishment he had so richly merited! Bold Science—not impious,—far from it—bold only in its determined search for truth, and modest ever—has pushed home some searching questions concerning water contamination, and infection of different sorts, which begin to throw much light on its diffusion, and will, before long, I think, make cholera visitations in India as few and far between as they are now in Europe.

These are the fair realms of study and usefulness medicine opens up to you. She has to do with every thing that concerns man's material comfort and safety, not only to cure but to prevent disease, and thus the very elements form subjects of its investigation. Your ancestors here again seem to me to have forestalled modern civilization. Pure water, enough and amply enough for all man's wants, is the great cry now of our large cities in Europe, thanks to the teachings of Modern Hygiene. If I am not mistaken, your ancestors, especially the Brahmins, had grasped this fact ages ago. The careful preservation of their own wells and tanks from contact by interior and unclean castes, the scrupulous cleanliness of the vessels used in carrying and preserving water, and the habit of frequent bathing enjoined as a religious observance, all demonstrate the great value your forefathers attached to supplies of pure water. And now science, with its chemical tests and the Microscope, demonstrates as clearly as any problem in Euclid can be demonstrated,—that in impure water lie the contaminating germs of fevers, cholera, dysentery and other diseases. Unfortunately, you have, at least many of you, long lost the value of this wisdom, and not only are your wells in many places less scrupulously clean, but your habits in all large religious gatherings of contaminating the streams and water-supplies, tends in this hot climate to originate and spread the dreadful epidemics for which India is so famous.\*

\* Since these remarks on water were written appeared the following para. in the *Overland Mail* of February 22:—

"The Prince of Wales has addressed the following letter to the Chairman of the Council of the Society of Arts:—

"Sir—The supply of pure water to the population is at the present time exciting deep interest throughout the country. Our great cities and populous towns, such as Manchester, Liverpool, Birmingham, and others, are, each for itself, taking steps to obtain an improved and increased supply, while the metropolis is seeking further powers from the Legislature with the same object in view. The smaller towns and villages are dependent on accidental sources of supply, and in many instances these are wholly inadequate for health and comfort; while the larger populations are striving, each independently and at enormous cost, to secure for themselves this article of prime necessity, the smaller localities must make the best shift they can, and in many instances are

Air as well as water falls under the immediate attention of the Physician. It is more essential even than man should have pure air to breathe than pure water to drink. Floating in the atmosphere are myriads of contaminating germs against which knowledge may defend us; and simple contrivances of admission or exclusion of certain winds may make all the difference in this country of health or sickness in a household.

Food, of all sorts; the abuse or rightful use of alcoholic drinks; impurities in food, their detection and methods of removal—all fall in the present day under the province of the intelligent physician. And how usefully such knowledge may be turned to the benefit of mankind I need not, I am sure, remind Madras, which has not yet forgotten how the bold and sagacious words of its Sanitary Commissioner spoken in time, saved, during the past famine, most probably hundreds of thousands of lives of our poor fellow subjects.

But can I pass over the subject of food without making some allusion to the late dreadful famine which has visited this land? Pardon me the wretched platitude, but without food we cease to exist; this is too self-evident, but what does not seem so self-evident, although equally true, is that man can, by his ingenuity and the right application of science, do much to avert, if not altogether prevent, these calamitous visitations. I am not going to suggest we can put spots on the sun if it is really owing to the non-maintenance of that luminary we are indebted to the failure of our monsoons. But the sun is not an invention of to-day, and I may be allowed, with the greatest respect for my friend Mr. Pogson, to say I am with those who hold that that theory is not yet proven. But what history indubitably teaches us is that, whereas in the dark ages, Europe, as I said before, was one recurring scene of pestilences and famines, famines under improved means of cultivation have practically ceased to exist. Some harvests, of course, are less plentiful than others, and occasionally there is partial distress, but famines such as we have had, are now, I may say, unknown. In the British Isles we have had no famine since 1847-48, when the potato failure caused such distress in Ireland. Now what was the course pursued by the people of England after this famine? I don't remember that they troubled themselves much about spots on the sun, but spots on Irish cultivation were very effectually rubbed out—the whole system of agriculture was changed. Agricultural colleges were started and an amount of attention directed to the food supply of the people which eventuated in almost changing the face of the

country. Nor must you suppose that, in the British Isles, farming, as in this country, is relegated to the lower classes only:—as

“In ancient times the sacred plough employed  
“The King and awful fathers of nobles;  
“And some, with whom compared your insect tribes  
“Are but the beings of a summer's day,  
“Have held the scale of Empire, ruled the state,  
“Of mighty war! these with exalted hand,  
“Disclaiming little delicacies, sowed  
“The plough, and nearly independent lived.”

So our great nobility, our Dukes, Earls and others, even Royalty itself, are many of them admirable farmers, and take the liveliest practical interest in the development of all that concerns the soil. Here it seems to me you have a most splendid opening for the educated youths of this country, and as Government has instituted an Agricultural College in Madras (and if I had any voice in the matter I would make the teaching of agriculture compulsory in all our Normal schools) there is no excuse for some of you not following this science. Of what may be done in this way two examples occur to me as I write, and had I time I have no doubt numberless other instances could be adduced. Thirty years ago, Wynnad was a jungle, the home only of elephants, wild boar, sambar and fever. It was almost a “terra incognita,” save to the adventurous travellers who made a short cut through it from the Western Coast to Mysore. It is now the home of hundreds of venturesome and intelligent Englishmen, who employ thousands of your fellow countrymen in the cultivation of Coffee and Cinchona. The dense jungles are gradually being converted into fruitful plantations, and I presume the value of the property may now be estimated at millions! And from cultivation fever flies! Are there not countless tracts of land in India waiting only industry and science to be thus converted into smiling gardens, amply repaying, as Nature always generously repays, those who cultivate her? How cultivation affects even climates, and calls down as it were rain from Heaven, I may cite to you the singular change which has come over that tract of land through which the Suca Canal has been cut. Hitherto rain was quite unknown there, but now ever and again, the astonished Arab is witness of what to him would have been formerly a strange phenomenon, a refreshing shower. Is it not possible, and even probable, that well-directed industry in planting forests, damming our rivers, opening up irrigation works and making tanks, would thus beneficially change our climate in Southern India, and avert our Rain Famines?

But time will not permit me to pursue the subject further. I have said enough, I think, to convince you that Medicine is not a science which the people of India, of all people, and especially the Brahmmins, should despise or neglect. It originated with you, and the prejudices which now deter you from its study had no existence in your golden age. It is essentially a study worthy of the noblest faculties of man, and one which the shrewd, patient, clear intellects of the people of this country, especially the Brahmmins, would master and adorn. But is there not something else which keeps the bold intellects amongst you from choosing Medicine as a career? I am afraid there is; and here, as a servant of Government, it behoves me

all but without supply at all. Under these circumstances, I would draw the attention of the Council to the subject, and suggest whether, at the present time, great public good would not arise from an open discussion of the question in the Society's rooms, with a view to the consideration of how far the great natural resources of the Kingdom might, by some large and comprehensive scheme of a national character, adapted to the varying specialities and wants of districts, be turned to account for the benefit not merely of a few large centres of population, but for the advantage of the general body of the nation at large.

“This communication was laid before the Council at their meeting, and it was resolved that a committee be formed to consider the best means of carrying into effect the Prince's proposition. The Secretary was also desired to inform His Royal Highness that the Council would take immediate steps to secure the discussion of the subject as suggested.”

to be careful in what I say, but I take courage from the Viceroy's witty figure of speech on a late occasion, and feel sure that no English Government would wish to be treated as the Parsees treat their dead; to be surrounded by a Tower of Silence.

Medicine is not an honored calling amongst Englishmen. There is no use blinking the fact. It is the Cinderella amongst professions. It wears the poor clothing and does the drudgery, whilst its sisters, Law and Divinity, and in this country Arms and the Civil Service, are clad in purple and fine linen and obtain all the honours. You hear it called an "honorable profession," a "noble" profession, but this alludes not to its rewards. No English Physician, ever so famous, was ever elected. In this country no English Physician has ever been deemed worthy a seat in the Legislative Council. If the English gods claimed the ocean for lost treasures, I am afraid it's not a learned Physician they would bring up; or if by chance they did, they would not make him king of Benares; they would most probably pop him in again and go on churning, until a lawyer or a clergyman came up to fill the place to be made a Chancellor or an Archbishop.

It would be waste of time on this occasion my offering any speculations as to why this is so. I must content myself with simply mentioning the fact and pointing out how, in my opinion—open, I feel acutely, to the misconstruction of professional jaundice—this state of things is injurious to the commonwealth. In the first place it deters the men who would honor and benefit medicine with their acquirements and social influence, seeking a career in this most useful and intellectual profession. All men of any worth are more or less ambitious of distinction, and such men avoid Medicine and overpowered the ranks of other professions. You do it in this country. But in other ways of even more importance it is injurious. How many fair enterprises of our country have been shipwrecked, because the feeble voice of Medicine (feeble from its position) has been contemptuously silenced or set aside? Many of us in this room remember the mismanagement of our first winter in the Crimea; how our poor wounded soldiers died from mere want of ordinary comforts and attention; and the siege of Sebastopol was made a lingering sacrifice, on which a holocaust of brave British soldiers was offered up; singly and solely, I verily believe, because after Alma the Commander-in-Chief, hampered by wounded and uncared for soldiers was unable to advance and snatch the prize their bravery had won for our Queen and Country. It was afterwards discovered that what was wanted, and which was subsequently supplied twentyfold by a generous and indignant country, had been asked for by the head of the Medical Department, a Peninsular Veteran, who knew well the needs of an Army on service, but his requests had been treated with scorn and neglect. Only the other day, a prize England has long set her heart on, and was within an ace of seizing, escaped her sailors from this contemptuous treatment of professional advice. To allude to the expedition to the North Pole, which miscarried from scurvy amongst the men, because lime juice, in direct contravention of Medical advice, was omitted from their rations.

But let me turn from this ungrateful feature of my subject. Just as in the fairy tales, the resplendent Prince appears at last with the

glass slipper and elevates poor Cinderella to her proper sphere, so some far-seeing and benevolent statesman, some Lord Herbert of Lea, will come and place Medicine in her proper place, so that not only its sons shall be honored, which is after all a secondary consideration, but the voices of its "ancients" listened to when they speak of what they know, and the subjects of our Gracious Empress saved from unnecessary suffering and pestilence.

There is now left to me last, but not least, the most grateful portion of my task. I have to congratulate you who have to-day been capped upon becoming members of this University, and I do so on behalf of our noble Chancellor and the Senate most cordially. May your lives be happy, your careers useful to yourselves and to your country, and creditable to the University of which you have this day become members. You stand here, to my mind, like soldiers who have been dismissed their training. Arms are in their hands, and they are looked forward to henceforth as the defenders and warriors of their country. The arms placed in your hands are the keen weapons of science; like faithful soldiers keep them ever ready and bright by use. Be the peaceful warriors of Southern India, and though the combats you may go forth to wage are bloodless, and there is "no glorious pomp and circumstances of battle," yet are the victories, if possible, more splendid, the result to your country more important. If any among you take up the path, I have indicated, Medicine or Agriculture, your foes will be pestilence and famine, and they slay myriads compared to the puny efforts of man's bloodiest wars. These be ye men worthy of your steel, and if there shall arise amongst you some one who, by his genius and acquirements, shall shew his countrymen how to avoid, or mitigate these evils, he will, even should he escape decoration, be amply honored in the plaudits of a grateful posterity.—*Modern Times.*

#### PETER CATOR PRIZES.

Report for the year 1877.

The examination for Mr. Peter Cator's prizes was held in September last, and we proceed to give a few particulars. The interest taken in these examinations in former years shows no signs of abatement but rather the reverse, and it is our hope and prayer that the visible and tangible interest, shown in the continued large number of candidates, is only an external evidence of a deeper work to be accompanied hereafter, if not now, with great eternal results. In other words may we not expect that God's Word, so carefully studied, will not "return void," but will accomplish effects to be known in eternity?

The subjects read last time were Scripture only for the Lower Grade, and Bushnell's "Character of Jesus" in addition to Scripture for the Higher Grade.

The amount given in prizes this year was Rs 390 for the Higher Grade, and Rs 400 for the Lower Grade.

For the Higher Grade there were fewer candidates than in the two previous years, but for the Lower Grade 70 more presented themselves for examination than last year.



The following table shows the proportions :—

| Years.   | Higher Grade.  |                         |                      | Lower Grade.   |                         |                      |
|----------|----------------|-------------------------|----------------------|----------------|-------------------------|----------------------|
|          | Names sent in. | Present at Examination. | Obtained half Marks. | Names sent in. | Present at Examination. | Obtained half Marks. |
| 1875 ... | 42             | 42                      | 19                   | 338            | 313                     | 99                   |
| 1876 ... | 63             | 56                      | 44                   | 310            | 270                     | 147                  |
| 1877 ..  | 16             | 10                      | 21                   | 372            | 340                     | 220                  |

In Madras, boys from 11 different schools competed, and girls from 11 different schools: this of itself sufficiently shows how well appreciated the scheme of Mr. Peter Cator has become. The examination for the boys was held in the Free Church Mission Institution, and that for the girls in the Civil Orphan Asylum.

In the Mofussil the examination was conducted this year in 13 different centres, being an increase of 1 on last year. But Ramnad, Bangalore, Nellore, and Coimbatore, which contributed candidates last year, had no representatives this time: while Ootoor, Conjevaram, Secunderabad, Vizagapatam, and Ellore appear on the list.

In both the Higher and Lower Grades the first prizes have been carried off by girls, and while we congratulate them on their success we at the same time hope it may stimulate the boys to greater exertions to prevent a repetition of their defeat. The Examiners shew that Grace Bell Hart, private study, Madras, who heads the Higher Grade was a long way in advance of any other competitors: Eva Lee, of the Lawrence Asylum, Ootacamund, who takes the 1st Prize in the Lower Grade stands 6 marks above the next in order.

The additional prizes for non-Christian Candidates were won by F. R. Subba Row, F. C. M. Institution, in the Higher Grade, and by A. Manikkam Aiyar, and A. Sundram Aiyar, both of the S. P. G. High School, Madras, and C. Daivasigamany of the F. C. M. School, Chingleput, in the Lower Grade.

With regard to the examinees generally, the Examiners think that rather more compete than have any hope of success, and that it would be well for those who prepare them for the examination to use their discretion and not allow all who study the subjects to enter indiscriminately. Some kind of preliminary examination by the teachers in each case might be given with advantage. By this means those who prove to be insufficiently prepared might be kept back. This plan would of course diminish the numbers of candidates who would appear on the examination day, but it would be a great saving of unnecessary toil to the Examiners who in the midst of other multifarious duties have so generously undertaken to look through the papers. One Examiner thinks it a great pity that great care is not always taken to put the sheets in their proper order.

The reports of the Examiners in other respects are encouraging.

The Rev. A. F. Barley writes:—

"It will be seen that *Grace Bell Hart* is a long way in advance of any one of the other competitors. Her paper is a model one. There is not a blot or an erasure in it. She deals with the questions in a right masterly way, and has well won her right to her number '1.' The papers of the other girl-competitors are, with the exception of *Charlotte A. Evans*, much below the mark. The three first boys run one another pretty closely. *Tobias Zacharias* 38½, *Edward John Guaneayir* 38, *Joseph Ephraim* 37½. On finding them so near together, I went carefully over their papers again but saw nothing to justify altering the original finding. There is but a shade of difference between them in point of excellence, while each has its distinguishing feature. *Zacharias* has a firm and manly grasp of the subject. *Guaneayir* is methodical and precise to a degree. *Ephraim* suffers his minuteness of detail to make him somewhat diffuse. *Chakko* who comes next with 35½ marks, sends in a good paper, the matter being well arranged and concise. In fact a little more amplitude would have put him in the front rank. *John Kobandamloo* gives pretty full details, but exhibits a lack of judgment as to his choice of material."

The Rev. W. J. Richards writes regarding the Higher Grade:—

"There can be no doubt that many of the examinees, nay the majority as far as I can testify from the paper I examined in, have well grasped the import of the Divine words they have been studying. There was not even one egregious blunder in the forty or more papers. The girls did remarkably well, I think; especially when it is more than probable that the boys were all taught by ministers of religion."

The Rev. G. O. Newport, while regretting that the standard of the Lower Grade seemed somewhat lower than last year, adds:—

"I have had great pleasure in examining the papers. I have a great delight in Scripture study and in seeing how the Scriptures are studied by others."

The Rev. G. M. Cobban writes respecting the Lower Grade:—

"The work as a whole has been very well done by the candidates. In nearly all the papers those questions which need the exercise of the analytical faculty are not so well answered as those which appeal to the memory. I have had much pleasure in going over them, and trust that the knowledge attained by the candidates in the study of Matthew may influence them in future years."

The comparative success of the several schools will be seen from the following details:—

The Free Church Mission in Madras gained two prizes and three certificates in the Higher Grade, and 13 Certificates in the Lower Grade, while in the Lower Grade the Institution in Chingleput gained one Prize, and the Branch School in Madras gained 2 Certificates, that in Chingleput 2, and that in Conjevaram 4 Certificates.

The S. P. G. Seminary at Sawyerpuram gained the 2nd prize and 4 certificates in the Higher Grade, and 1 prize and 10 certificates in the Lower Grade: while the Vepery S. P. G. School gained 3 prizes and 6 certificates in the Lower Grade.

The Church Missionary Society's Cottayam College gained 3 certificates in the Higher Grade, and 2 prizes, and 5 certificates in the Lower Grade: the Noble School, Masulipatam, gained 6 certi-

ificates in the Lower Grade : and the A. V. London Mission School, Bezvara, gained 3 certificates, and the English Institution, Palamcottah, 2 Certificates in the Lower Grade.

In the Lower Grade only, Bishop Corrie's Grammar School gained one prize and 21 certificates.

The Lawrence Asylum Boys took 20 certificates, and the Girls 2 prizes and 5 certificates.

The Nagercoil Institution gained 2 prizes and 12 certificates. The London Mission Institution in Madras gained 1 prize and 5 certificates: the Davidson Street Schools gained 5 certificates, and the L. M. S. Girl's Boarding School, Madras, one certificate.

The Wesleyan Mission School, Madras, gained 4 certificates.

The Church of Scotland Institution, won 3 certificates, and St. Andrew's School 10 certificates.

\*The Doveton College Boys carried off 1 prize and 4 certificates : and the Girls 2 prizes (the second and sixth) and 11 certificates.

Christ Church Girls' School won 2 prizes and 3 certificates.

The Civil Male Orphan Asylum gained 5 certificates, and the Female Orphan Asylum 7 certificates.

The Military Female Orphan Asylum and the Secunderabad Orphanages won 7 certificates each : while the Orphanages at Vizagapatam took 5.

The Madras Emmanuel Church and Union Girl's Schools gained 4 and 3 certificates respectively.

The one candidate from Oosoor carried off a certificate.

Thus while some Schools were unfortunately unsuccessful this year, it will be seen that the prizes and certificates have been very generally distributed amongst the others, and there is enough to encourage other schools in the Presidency to compete, if they have not yet attempted to do so. It is most desirable that all boys and girls in our Presidency should know of the examinations and be encouraged to read for them, for thus only will Mr. Peter Cator's effort really gain its object, "the encouragement of continuous Biblical and other solid learning."

In this last examination 6 Mahomedan boys competed. It is a matter of regret that not one of them was successful, though two very nearly reached half-marks. The papers of one of them were rather accurisity, for they contained constant repetition of the expression "Son of God," which is so hateful to his community. The boy seemed to be doing his very best to ingratiate himself with his Christian examiner. Should any in future obtain a prize or even a certificate, it is likely that many more will be led to read for the examination, and thus to study carefully those Sacred Books on which so many of them now look with undisguised aversion.

We commend the Peter Cator Examinations to all who value the education of our young men and women in matters affecting their eternal interests. While we look with gratitude to past success of a certain kind, is there not still a great deal more that might be done in this direction, and might not this particular means be more generally and thoroughly used as a means to the great end that Christian teachers in the Madras Presidency have in view?—*Church Missionary Record*.

| Peter Cator Higher Grade—1877.     |                  |         |               | Lower Grade—1877.             |         |               |     |
|------------------------------------|------------------|---------|---------------|-------------------------------|---------|---------------|-----|
| MADRAS INSTITUTIONS.<br>Young Men. |                  |         |               | MADRAS INSTITUTIONS.<br>Boys. |         |               |     |
| Number of Candidates Registered.   | Number Examined. | Prizes. | Certificates. | Number Examined.              | Prizes. | Certificates. |     |
| 10                                 | 9                | 3       | 5             | 27                            | 24      | 21            | 21  |
| 1                                  | 1                | 1       | 1             | 25                            | 24      | 10            | 10  |
| 1                                  | 1                | 1       | 1             | 20                            | 13      | 10            | 10  |
| 12                                 | 10               | 2       | 6             | 19                            | 19      | 5             | 4   |
|                                    |                  |         |               | 7                             | 6       | 4             | 4   |
|                                    |                  |         |               | 5                             | 5       | 3             | 3   |
| 2                                  | 2                | 1       | 1             | 8                             | 8       | 4             | 4   |
| 4                                  | 4                | 1       | 1             | 13                            | 6       | 3             | 3   |
| 6                                  | 6                | 1       | 1             | 5                             | 5       | 2             | 2   |
|                                    |                  |         |               | 3                             | 3       | 1             | 1   |
|                                    |                  |         |               | 3                             | 3       | 1             | 1   |
|                                    |                  |         |               | 1                             | 1       | 1             | 1   |
|                                    |                  |         |               | 7                             | 6       | 4             | 4   |
|                                    |                  |         |               | 153                           | 149     | 6             | 77  |
| 10                                 | 10               | 1       | 4             | 13                            | 13      | 2             | 11  |
| 9                                  | 8                | 3       | 3             | 7                             | 7       | 2             | 7   |
| 9                                  | 6                | 1       | 2             | 8                             | 7       | 2             | 4   |
| 28                                 | 24               | 2       | 9             | 9                             | 9       | 3             | 3   |
|                                    |                  |         |               | 7                             | 6       | 3             | 3   |
| 18                                 | 16               | 3       | 7             | 7                             | 6       | 3             | 3   |
| 23                                 | 21               | 2       | 9             | 12                            | 12      | 1             | 1   |
|                                    |                  |         |               | 12                            | 12      | 1             | 1   |
|                                    |                  |         |               | 1                             | 1       | 1             | 1   |
|                                    |                  |         |               | 6                             | 6       | 1             | 1   |
|                                    |                  |         |               | 62                            | 57      | 4             | 46  |
| 46                                 | 40               | 5       | 15            | 235                           | 206     | 10            | 113 |
| Grand Total.                       |                  |         |               | Total.                        |         |               |     |

# Peter Cator Lower Grade - 1877.

(Continued):

## Mofussil Institutions.

### Boys.

Lawrence Asylum, Ottacamund  
L. M. S. Seminary, Nagereol  
S. P. G. Seminary, Saveripuram  
C. M. S. College, Coimbatore  
Noble High School, Masinatalam  
F. C. M. School, Chingleput  
Orphanage, Secunderabad  
F. C. M. School, Coimbatore  
C. M. S. A. V. School, Bezwada  
C. M. S. English Institution, Palamcottah  
Orphanage, Vizagapatam  
C. M. F. A. V. School, Ellore  
Private Study

### Girls.

Lawrence Asylum, Ottacamund  
Orphanage, Vizagapatam  
Orphanage, Secunderabad  
Barnard Depot School, Oossor  
Private Study

## SUMMARY.

Madras Institutions and Private Study  
Mofussil Institutions and Private Study

Grand Total.

| Number of Candidates Registered. | Number Examined. | Prizes. | Certificates. |
|----------------------------------|------------------|---------|---------------|
| 20                               | 20               | 1       | 20            |
| 23                               | 18               | 1       | 12            |
| 23                               | 12               | 1       | 11            |
| 12                               | 12               | 1       | 6             |
| 12                               | 12               | 1       | 6             |
| 15                               | 14               | 1       | 5             |
| 9                                | 8                | 1       | 3             |
| 4                                | 4                | 1       | 3             |
| 4                                | 4                | 1       | 3             |
| 5                                | 3                | 1       | 2             |
| 2                                | 2                | 1       | 2             |
| 128                              | 115              | 6       | 77            |
| 9                                | 8                | 2       | 9             |
| 3                                | 3                | 3       | 6             |
| 6                                | 6                | 1       | 2             |
| 1                                | 1                | 1       | 1             |
| 19                               | 19               | 2       | 12            |
| 147                              | 134              | 8       | 89            |
| 225                              | 206              | 10      | 113           |
| 147                              | 134              | 8       | 89            |
| 372                              | 340              | 18      | 202           |

Total

# List of Prize Winners, 1877.

## HIGHER GRADE.

1. Grace Ball Hall, Private Study, Madras  
2. Daniel Joseph, S. P. G. Seminary, Saveripuram  
3. P. M. Chakko, F. C. M. Institution, Madras  
4. Tobias Zacharias, Private Study, Palghat

The additional Prize of Rs. 20 for the highest non-Christian Candidate has been gained by No. 14, F. R. Subba Rao, F. C. M. Institution, Madras.

## LOWER GRADE.

1. Eva Lee, Lawrence Asylum, Ottacamund  
2. Gertrude Bailey, Doynton Girls' School, Madras  
3. V. Varkki Karavilla, C. M. S. College, Coimbatore  
4. George C. Wolfe, Doynton College, Madras  
5. Elizabeth Peckins, Lawrence Asylum, Ottacamund  
6. Alice G. Stagg, Doynton Girls' School, Madras  
7. Camilla G. Gilles, Christ Church School, Madras  
8. John D. Solomon, S. P. G. High School, Vengery  
9. Wm. Green, Bishop Corrie's Grammar School, Madras  
10. K. M. Mathai, C. M. S. College, Coimbatore  
11. Mabel T. Gilles, Christ Church School, Madras  
12. Devadass Jacob, L. M. S. Seminary, Nagereol  
13. John Corelingam, L. M. S. Institution, Madras  
14. Paul Apolin, L. M. S. Seminary, Nagereol  
15. D. Paulkattan, S. P. G. Seminary, Saveripuram

One additional Prize of Rs. 15 and two of Rs. 10 each for the highest non-Christian Candidates have been gained by

No. 52. A. Manikam Aiyar, S. P. G. High School, Madras.  
No. 73. A. Sundaram Aiyar, S. P. G. High School, do.  
No. 83. C. Darvasanman, F. C. M. School, Chingleput.

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## THE NATIVE DEFENDERS OF THEIR VERNACULARS.

We have much pleasure in giving the following letter of the native gentlemen who opposed the substitution of a classical language for the vernaculars in the F. A. and higher examinations of the University. We regret that we are unable to give the letter to which it is a reply, as we were not honoured with a copy of it:—

To the Registrar of the University of Madras.

SIR,—We have the honour to request you to lay this before the Members of the Syndicate and Senate in view to its being considered in connection with a letter largely signed and addressed to them on the subject of candidates for the F. A. & B. A. Examinations being "compelled to take up a classical language as their optional language."

2. We are aware we shall have to contend against a powerful antagonism in the Senate, remembering as we do their proceedings of 3 years ago when this same agitation was set on foot; but relying on the strength of our own cause, we beg leave to enter up this protest in performance of a duty we owe to ourselves and to our country.

3. The "letter" above referred to requires the candidates for the F. A. & B. A. Examinations to be compelled to take up a classical language for the optional, and admits that "the consequence of such a rule will be that almost all the native students who form a considerable majority of the candidates appearing for those Examinations will take up Sanscrit, the ancient classic of India."

4. We quite admit the certainty of the consequence pointed out above, and it is to guard against such consequence, which we believe to be subversive of the interests of education and popular improvement, that we seek to trouble the Senate with our views on the subject. Although our convictions upon the subject are strong, it is our object not to commit ourselves to strong and intemperate expressions of the same, and we further hope to be as brief as possible.

5. The proposers of the rule aforesaid are in raptures over imagined blessings of Sanscrit education, and have naturally indulged in speculations which we resolved to leave alone. We shall simply notice and reply to some practical points raised by them which, with the semblance of arguments, prove, in our humble opinion, to be no arguments pertinent to the purpose for which they are adduced, and in a measure, consist of conclusions based upon unwarranted premises.

1st. They say that the knowledge of Sanscrit will make "Western ideas diffused through their (?) medium more acceptable to the general mass of Hindu population."

This is against reason and human experience. The general mass of any country's population is accessible only by means of a tongue which they speak and hear spoken every day. A strange language must fail as a medium of instruction to them. Sanscrit has no charm to work against this law of nature, and for all intents

and purposes, is as foreign to the masses of the country as any western language.

2ndly. It is said that the spread of Sanscrit learning will contribute to the improvement of the Vernaculars.

This is hardly intelligible. The Vernaculars may possibly improve by imitating upon Sanscrit vocabulary as is the case with various languages; but we fail to see how the present condition of the Vernaculars in the country will be improved by the spread of Sanscrit learning; much less if the study of the former is discouraged as is proposed. What is proposed is, as we conceive, nothing less than doing away with what is sought to be improved and substituting in its stead the instrument for improvement.

3rdly. It is suggested that scientific and technical education cannot be imparted without the aid of Sanscrit inasmuch as scientific and technical terms have to be coined in Sanscrit.

This is not absolutely true, and assuming it to be so, it does not follow that Sanscrit should be exclusively studied for any examination in the place of the Vernaculars. The present state of Sanscrit learning more than suffices for the purpose. Again it would be an inconsistency to invent hard words and new names to help the diffusion of knowledge among the people, nor does the coining of words, which all cannot do with equal wisdom, need to occupy the attention of the vast majority of undergraduates in preference to the cultivation of their mother tongue and other subjects of practical value without being left to the small minority of learned and scientific men who make the study of words and of the science of language the business of their lives.

4thly. It is asserted that intercourse between the various races of the country will be facilitated by the cultivation of Sanscrit from which their languages have borrowed.

This we beg leave to say is a startling proposition. No Tamil or Telugu speaking native has yet found in his experience that it is easier for his class to learn Canarese or Marhatta through the medium of Sanscrit than directly. And we may assert that what is in this respect true for any one Vernacular is true for all.

5thly. It is thrown out, with some confidence that Sanscrit study until graduating will prepare students for a subsequent easy self-education and self-instruction in the Vernaculars.

This, as we endeavour to show elsewhere, is contrary to the experience of men connected in any measure with native education. Further it is hardly logical to contend that the Vernaculars should be replaced by Sanscrit if the former is the end, and the latter, only a means to attain it.

6. For our own part, we undertake to assure the members of the Senate that, if the general well-being and advancement of the native community be at all an object, they cannot too scrupulously regard or too anxiously maintain and foster the Vernaculars in the University examinations.

7. The ulterior aim of all Indian education is taken to be that the educated natives should prove the interpreters of the Western thought to their ignorant fellow-countrymen and their instructors in practical and useful departments of Western knowledge. To achieve this, there must be provided a medium of instruction familiar to and at the command of those that impart it, and accept-

able and intelligible to those that receive it. What can be such a medium except the mother tongue of the recipients of instruction, in other words, the Vernaculars of the country? Then, if the intended instructors lack the command of this medium, they must fail as such instructors.

8. Then the question is, how are these instructors to be provided with this all-important means of instruction? It is suggested on the other side that the Vernaculars are easily learnt and mastered by natives without any special instruction in them; that University graduates after graduating in Sanscrit, can with no stretch of labour set about acquiring a competency in the Vernaculars, if they have not already acquired it, or rather come by it, by reason of their birth, and go forth ready armed to impart to the illiterate classes, their acquisitions of Western knowledge. Now if this were true, the whole letter in question would be intelligible and commend itself to an unqualified acceptance and adoption. But it must be confessed that natives find as much difficulty in acquiring any thing like a mastery of their Vernaculars as of English, a foreign language. The results of the University Examinations, year after year, testify to this. Disgraceful specimens of Vernacular idiom and composition are the treats in store for the Examiners. We will not quote from them for fear of disfiguring this, but will appeal to the experience of such of the Senate members as have been Examiners from time to time. This is not all. There is a degree of indifference, almost inexcusable, betrayed towards the study of the Vernaculars by the generality of students. Instruction in all branches of study being afforded in the English language, the use of the Vernaculars is at a discount, and the Bachelors of Arts turned out by the University are in a majority of cases not far removed from mere smatterers in their Vernaculars. More or less compulsory education in Vernaculars being found to produce such results as the above, it is simply idle to expect the graduates to subsequently put themselves under a course of voluntary self-instruction in the Vernaculars admittedly devoid of all inducement as it is. If all this is true, can anything more cogent be urged to show that the Vernaculars of the country need all possible protection, all the fostering care that could be bestowed upon them by the University and the heads of Education?

9. The present system of making the Vernaculars a co-ordinate study with English in schools, public and private, is, as shown above a very necessary system and is perhaps the only remedy we have for checking the evil and saving the Vernaculars from decay and extinction. Indeed it is our humble opinion, which we state subject to correction, that no system of education can be reasonable or productive of good in any country, if instruction in foreign languages is not given with the aid of its Vernaculars; and in this country it seems to us that the more stringent the existing rules to the Vernaculars are made, the better for the interests of true and substantial education.

10. The above considerations are, it is hoped, sufficient to convince that if the Vernaculars are eschewed from the higher examinations of the University, the aforesaid purposes of Indian education must fail and the educated young men, acquiring a knowledge, good or bad, of English, and ignorant of their mother tongue will be incapable of agreeable or intelligible expression for the benefit of their

ignorant fellow country-men whose regeneration must therefore be a forlorn hope.

11. Next it is only fair to the other side to examine if it proposes any remedy for the evil. The study of the Sanscrit is prescribed for the higher examinations. It will be admitted on all hands that Sanscrit is a language supremely difficult of learning with a grammar unique in its complexity. Years of study only give us a smattering in it, and it is therefore simply useless to begin it after *matriculating*. It will therefore be no violent assumption to hold that it must, if at all, be commenced with the English alphabet, not much later at any rate. Then any knowledge of the Vernaculars or future attempt at self-instruction in them being out of the question, as we have already endeavoured to prove, the graduates of the University will be left among the ignorant masses with English, a foreign language, supplemented to Sanscrit, a dead and no less foreign, language for their aid. In connection with this, however, we cannot deny ourselves this opportunity to intimate that, with all the exclusiveness of patronage and encouragement proposed to be afforded to Sanscrit, and despite the fond hopes of its friends, only very little material progress will have been made in its literature or grammar by the graduates of the University, and all the blessings and advantages of Sanscrit learning, so much rejoiced at in anticipation, must unfortunately be a tantalising phantom. We say so, because we feel certain that no curriculum of Sanscrit studies can be prescribed for the examinations with due regard to their standards, so comprehensive as to place within the candidates' reach the boundless intricacies of its grammar, the richer beauties of its literature, or the loftier heights of its philosophy. And we are far from sanguine that after the young men have been left for themselves from under the care of the University, they will give themselves much ado about improving by a life-long study their exceeding imperfect stock of knowledge.

12. Before closing, however, we feel it incumbent on us to advert to an opinion entertained and urged with confidence by the extreme friends of Sanscrit that the Vernaculars of this Presidency possess no literature or grammar worth much to render them worthy of a place side by side with other languages, and therefore of University patronage. To this our reply is that while yielding the palm to Sanscrit they give the lie to those extreme assertions. Most critical judges have realised in them vast stores of rhetorical and grammatical excellences and beauty, and a vast majority of Sanscrit works find their translations, or equivalents in those languages. At any rate there is no denying that they possess works worthy of the Bachelors' Degree in Arts. We do not mean to deny that in some departments, their literatures are susceptible of improvement, but we take occasion to urge that, if only on that ground, it seems to us that they are objects for encouragement and solicitude rather than for an unfeeling condemnation.

We do not wish to trespass further upon the time of the Senate, and we shall have attained our object if we succeed in proving to them that there is not, as is vainly imagined by the friends of the proposition now before them, a consensus of opinion in favour of the exclusive maintenance of Sanscrit in the higher examinations of the University, among those competent to form or pronounce an opinion upon the subject. We feel we have not done anything like justice

to our cause. "Our ground has been trodden already with greater effect by some members of the Senate whose voice was raised in support of our cause 3 years ago upon the same question, despite a strong and determined opposition, and to whose weighty words of wisdom and truth we beg to refer the members of the Senate in their present deliberations. To use the words then used, the proposed change would prove a "national calamity" and we respectfully trust that our humble appeal now made to avert that result will not go in vain.

We are, Sir,  
Your obedient servants.

MADRAS, April 1878.

### THE SCIENCE OF EDUCATION.

Concluded from Page 143.

For this and other reasons good pieces of English poetry should be *learnt*, that is, not carried for a few days but hoarded up for life. For this purpose they must be much more elaborately studied than poetry usually is. The ordinary way is for the teacher to set so much to be got up, and the children then read it over and over till they can "say" it. Sensational or parrot memory is therefore used at first if not at last also. True, many teachers will say, but this must be the case in almost all learning. Let the sensational or parrot memory, as you call it, exercise itself in early years and the mind will then know something to work upon when it is more fit to work. Your innovators would have nothing learnt by heart, or at all events nothing without full understanding; but full understanding is seldom possible. Who can say that he fully understands the highest utterances of great poets and thinkers? Are we then to learn only the inferior things which we can perfectly understand? And if you admit that the child can understand very little perfectly, you must admit that he should learn what he does not understand: in other words, you grant him the use of the sensational memory.

In reply to this, I contend that it is the educator's business to develop the memory which is most important and the least able to take care of itself. It is indeed true that comprehension even in adults is far from perfect and in children it is very imperfect indeed; but instead of assuming that children can't understand, and so getting them accustomed not to expect sense, the educator should train them to endeavour to understand. The child when he begins to learn will be ready to say with the Student in *Faust*: "Ein Begriff muss bei dem Worte sein.—The words must surely have a meaning." But the schoolmaster too often answers like Mephistopheles: "Schon gut! Nur muss man sich nicht allzu angestrengt quälen.—No doubt they have, but you need not bother yourself about it." The educator will try to make children discontented till the words have a meaning for them.\*

\* It is a most interesting question how far children who have not suffered from "teaching" do actually expect words to have meanings. At first they learn only the words they want, and every sound they acquire has its meaning; but they soon get to like jingles as such. I am by no means sure that the child is always so *reignant* as Goethe's student.

Remembering that the mind works only where it is interested the master will choose a piece of established excellence; simple in its character and of such a nature that it may connect itself with what the children already care about. Let us take, *e.g.*, "The Loss of the *Royal George*." As I have said, a careless master will simply set the piece to be learnt: a careful master may make the opposite mistake of preparing a great quantity of information and trying to enforce on his pupils' memories the date of Cowper's birth and death, his melancholy, his friendship with the Unwins, and much else which is not at all to the purpose. All this literary information does not interest the young and is never acquired by them except for the examiner. But the master may ask the boys about ships, about the difference between merchantmen and ships of war, about the size of ships of war and the number of men in them, about Portsmouth and its advantages as a harbour. I say he will ask, for it is better to get information from the boys, or at least their conception, which will have been formed on all subjects that interest them, and it is a good rule that the master should always talk as little as possible. The master may then tell the story of the disaster. He will say that this event was not in itself of such great importance as some other similar misfortunes, as *e.g.*, the loss of the *Captain*, but it has become celebrated through a poem. He will then recite the poem to them. He will next take a verse at a time and will ask questions about the meanings of the words and phrases. He will ask especially for any incident of the story which is referred to in the poem, as after reading the verse beginning "A land-breeze shook the shrouds," he will ask, On what coast of England is Spithhead? What wind was it that upset the *Royal George*? And afterwards, with reference to the line, "His fingers held the pen," he will ask, How was the Admiral engaged when the accident happened?

A remark suggests itself to me about questioning. \* I think it will be well worth the master's while to have *thought out* much of his questions beforehand, and to have marked his book in such a way that a glance will tell him what questions he purposed asking. Next, if he asks the class collectively, two or three boys will answer and the rest will feel they have no chance and will think of something else. If, on the other hand, he passes questions, a good deal of time is wasted; and besides, the first boy asked has not so much time to think as the last boy to whom the question descends: moreover, the last boy asked may have got some hint from previous guesses. Perhaps the best way is this: after asking a question and pausing the time requisite for thought, whether one second or twenty, to glance down one's list of the boys' names and stop the pencil at some name which one pronounces; if its owner is not ready with the right answer the master answers for him and gives him a negative mark, but if he answers right the master gives him a positive mark. If the answer is partly right a mark may be given equivalent to O; in this way the attention of the whole class is kept up. The marks cannot be made to give a fair result at the end of each lesson, and they should not be added together till after a series of lessons when many questions have been asked.

Before the class have the poem to learn they should have heard the master recite it on more than one occasion and they should also have read it aloud to him. At this stage, attention may be called to the

epithets by such questioning as this: "What is the shore which they were near called?" "Their *native* shore." "Why called *native*?" "The poet says she had sprung no leak. What kind of leak does he mention?" "A *fatal* leak." "What does this mean?"

The main difficulty in learning poetry is to remember the order in which the verses come. The master should be careful to make the pupil observe any connexion of thought in the consecutive verses. If the poem is a good one the *fitness* of the order will come out on examination, and the perception of this fitness will assist the intellectual memory. The principle of association of ideas may be turned to account in another way also. Instead of reading one verse over and over read always *two* verses. Read together several times the first and second, then the second and third, then the third and fourth. This way of forming a chain has been developed by Dr. Pick, and made the basis of many ingenious experiments.

In hearing the piece the master should not prompt by giving the next word, but he should give the *sense* of what follows, and in this way lead the boy to depend on his thinking memory.

When the piece is known it must be recited very slowly and distinctly and with strict attention to the meaning. The boy reciting should stand as far as possible from the master. It very much enlivens these recitations (which take too much time to occur often) if the boys all mark the reciter and read out their marks, the master giving *his* last. The boys will take great pains in their endeavour to get their marks near the master's.

We will suppose this and other pieces to have been learnt. In many schools pieces of English poetry when once learnt are never thought of again. In these schools the only things which are learnt to be remembered are the Latin and Greek grammars. But good English poetry is at least as well worth remembering as doggerel verses about Latin genders. Let it be understood then, that the poetry will be useful again and again in school work. From time to time pieces may be written from memory. Sometimes the most emphatic word in each line may be underlined in these written pieces; sometimes the subject in each clause, sometimes the epithets, sometimes the prepositions or adverbs, and so on; or the pupils may be required not to write the whole piece, but to write in column a list of the prepositions in it with the words governed by them. Or the pupils may be told to mention any similes that occur in such and such a piece which they have learnt. Then papers may be set which will test not only the verbal, but also the intellectual knowledge of the poems. *E.g.*, "State everything that you can make out from the poem itself about the burial of Sir John Moore." Sometimes a question that can be more briefly answered will test intelligence as successfully. Take for instance, Charlotte Smith's *First Swallow*. In the first verse she writes—

"The oaks are budding, and beneath,  
The hawthorn soon will bear the wreath,  
The silver wreath of May."

I lately asked, "In what month was the poem written? Give reasons for your answer." Almost all the boys answered "May, because the wreath of May is mentioned;" but the more thoughtful said "April, because the swallow had just come and the hawthorn would soon have the wreath of May."

Questions about the meaning and connexion of different sentences are most important, because if the boys understand the words in connexion they cannot be altogether wrong about the meaning of the separate words. Besides, it is a great matter to make them attend to the thought expressed by the whole sentence. Every one who has taught knows the tendency to disintegrate sentences and give a meaning to words or clauses which the least thought of the context would prove to be untenable; as *e.g.*, in the fearful case, lately mentioned by an inspector, of a boy's explaining "his native air" as "the air of his own head." But it would be very good for all of us, young and old alike, if we had to give an account of the exact sense in which we use words. I have heard it said of a songstress that she had a nice voice, but her singing did not give pleasure because she was "seldom in the middle of the note." I am much mistaken if scrutiny would not show that our words are often like the sounds produced by this lady, and that we are not in the middle of the meaning of them. The young are specially likely to form false associations of words and meanings; as in the case of the boy who was asked the meaning of *wholesale* and replied that it meant *retail*. I recently set some words from the poetry my pupils had been learning, and they had to give the meaning and also make a sentence for each with the word in it. The results were, in some cases, by no means creditable to the master, but I am far indeed from having attained my own ideal in this matter or in any other. The word "*flank*" was by several said to mean the *back*. Some said a *holster* was a pistol; some that a *peer* was a man without an equal, and worst of all, not a few who had learnt the line

"The sheen of their spears was like stars on the sea"

thought that the *sheen* was the *handle*. I believe we very few of us have any notion how small the working vocabulary of the young is, and words outside this working vocabulary they will not trouble themselves to understand unless their attention is specially called to them. For this reason as well as others we should make them thoroughly familiar with the exact meaning of all the words in their store of poetry, and we should take care that each word should suggest the line in which it occurs. A few minutes in the daily poetry lesson may be spent in asking such questions with reference to poetry already stored as, "Where does the word '*cohorts*' occur?" "In what line is the '*Sea of Galilee*' mentioned?" "In what way is a '*girth*' mentioned in the *Ride to Aic*?" "What instance can you give of the use of the word '*bayonets*'?" I have gone into detail in this matter because I thought that I could in this way best show you how our theory or conception of our task will make itself felt in our practice, *i.e.*, in our method of working.

REV. H. R. QUICK.

## EXAMINATION PAPERS.

### MATRICULATION CLASS.

(Pachiappa's High School.)

#### PHYSICS.

Time—Two hours.

#### I. Define the following terms:—

'Motion,' 'Force,' 'Velocity,' 'Friction' and 'Centre of Gravity.'

Name and Explain the chief forces of Nature. Describe the effects that would be produced by a temporary suspension of each of them.

#### II. Explain and illustrate the following:—

(a) The terms "*up*" and "*down*" depend upon the earth's force.

(b) "That which is easy to start is easy to stop, and that which is difficult to start, is difficult to stop."

#### III. (1) What is meant by "limits of perfect recovery?"

(2) Define a "falling body."

A stone, dropped down a well, falls through a space of 16 feet during the first second; through what space would it fall (1) in 3" (2) in the 8th second?

#### IV. State the properties of a correct balance.

A balance is in equilibrium when two weights P and Q are placed in the scale pans, and is also in equilibrium when P is reduced by one-third of itself, and Q is reduced by 3 lbs. Find the magnitude of Q in pounds.

#### V. Explain why?

(a) A man bends forward in getting up from a chair.

(b) A cooly when carrying a load on his head, walks upright.

(c) The Leaning Tower of Pisa continues to stand.

(d) In loading a wagon, heavy weights should be placed at the bottom.

VI. The arms of a false balance are in the ratio of 5 to 6. Find how much per viss a customer really pays for sugar which is sold to him from the longer arm at 10 annas a viss?

VII. If a pound weight at the earth's surface is capable of distending a spring to a certain extent, by how much will the spring be distended at the top of a mountain 10 miles in height, given that the force of gravitation varies inversely as the square of the distance of an object from the centre of the earth and that the diameter of the earth is 8,000 miles?

CLASS VI—MARCH 1878—ENGLISH.

Free Church Institution.

Re-write the following in the indirect form of speech, supplying suitable introductory verbs;

Alton Where were you yesterday?

Whose child is that? What are you doing here?

Dora This is William's child.

Allen. And did I not forbid you, Dora?  
Dora. Do with me as you will; but take the child,  
And bless him for the sake of him that's gone!

Allen. I see, it is a trick  
Got up betwixt you and the woman there.  
I must be taught my duty and by you!  
You knew my word was law, and yet you dared  
To slight it. Well—for I will take the boy;  
But go you hence and never see me more.

2. (a) Change into the comparative degree:—I would as readily consent to it as I would bequeath my body to dissection.

(b) Re-write 'She was younger than his brother'—using the word 'junior.'

(c) Express with a double negative:—Every Scotchman has a pedigree.

(d) Remove the interrogative:—What signifies an exertion that can at worst accelerate my death a few days?

3. Explain (1) He turned Whig upon the spot.

(2) Anne Scott seemed to be from her cradle the butt for mischance to shoot arrows at.

(3) My grandfather and many others of the faculty.

(4) Who may hear the last trump without dread of detection.

(5) We have nothing left of Dryburgh but the right of stretching our bones there.

4. Analyze into clauses:—

(1) I rather suspect that children derive impulses of a powerful and important kind in hearing things which they cannot entirely comprehend; and, therefore, that to write down to children's understanding is a mistake: set them on the scent, and let them puzzle it out.

(2) The more he looked at her, the less he liked her.

(3) My girl, I love you well;  
But if you speak with him that was my son,  
Or change a word with her he calls his wife,  
My home is none of yours.

5. In the following extract (1) expand *therefore* into a clause (2) supply the proper conjunction before *she is well* (3) express the last clause as a comparative. (4) give your own opinion about the wisdom or propriety of the father's determination:—

And I have set my heart upon a match.  
Now therefore look to Dora; she is well.  
To look to; thrifty too beyond her age.

6. As a short exercise in composition, describe in your own words the character of Scott's youngest brother, Daniel.

7. Explain the allusion in "Moses's bargain of the green speec-tacles." Write one sentence on the history of each of the following:—Fakstaff, Robin Hood, The Jacobites, The Knight of La Mancha, Automathes, Josephus, Colonel of the Greys.

8. Explain and criticise the use of *that* in:—

(1) So saying, he took the boy *that* cried aloud and struggled hard.

(2) She broke out in praise to God *that* helped her in her widowhood.

9. Give (1) the construction of *recording* in:—An odd incident is

worth recording; (2) the diminutive of *lad* (3) the primary and secondary meanings of *gentle* (4) the derivation and meaning of *lunatic* and *valedictory*.

### ENGLISH—3 hours.

Wesleyan Institution.—March 1878.

I. Paraphrase the first twelve lines of the Psalm of Life.

II. Fill in the clauses that are suppressed in the following extracts:—

(1) Let me have an answer to my wish:  
Or by the Lord *that* made me, you shall pack the thought

(2) "It cannot be" my uncle's mind will change.

(3) Well—for I will take the boy

But go you hence and never see me more.

(4) You know there has not been for these five years so

full a harvest:—

III. Rewrite (1) in the indirect form

"My uncle took the boy  
But, Mary, let me live and work with you  
He says that he will never see me more."

(2) Without irony

I must be taught my duty and by you.

(3) without 'if' and changing too into "more than."

If there was an old mother or aunt to be maintained he was too apt to administer to their necessities from what the young heir had destined exclusively to his pleasures.

IV. Point out anything faulty in

(1) So saying, he took the boy *that* cried aloud  
And struggled hard.

(2) But Dora lived unmarried till her death.

(3) Leaped like the roe when he hears in the woodland  
the voice of the huntsman.

(4) His manners were rather formal but full of genuine  
kindness, especially when exercising the duties of hospitality.

(5) John Scott, my second brother is about three years  
older than me.

(6) I begged him to spare this fatigue.

(7) With this little acidity which was natural to him,  
he was a most excellent and benevolent man.

V. Give the meaning and where you can the derivation of *seren*, *paradise*, *ecclesior*, *faucltion*, *clerion*, *gambadoes*, *atiquetto*, *Jorinal*, *rival*, *lunatic*.

VI. Explain briefly, *Druid's of old*, *the reign of the Hencies*, *Pious monks of St. Bernard*, *dormer windows*, *Jacobites*, *Anon from the belfrey*, *the Angelus rounded*, *penitent Peter*, *Knight of La Mancha*, *the Augustan age of Queen Anne*.

VII. (1) What two meanings has *dwelt* in the *love of God and of man*?

(2) Is the word *confidant* correctly used in *Alison took care that her confidant should not be subject to any further temptation*.

(3) What is the difference between (1) *had seen Pope*, and *had seen the Pope* (2) *He married late and He married lately*.



VIII. What is the meaning of the name Grand Pré? Quote the passage in which the meaning is stated. What particulars are given in Evangeline as to the geographical position of Grand Pré?

IX. Make sentences of your own using correctly—no sooner than, than me, too good, more or less, provided that.

X. Give examples from your text of (1) the gerundial infinitive used adverbially, (2) the gerundial infinitive used adjectively, (3) the verbal noun in *ing*, (4) the true infinitive in *ing*, (5) Euphemism, (6) Synecdoche, (7) Tautology.

XI. State in few words what you consider to be the moral lesson of Excelsior.

## EDUCATION IN CHINA.

### 1.—Influence on National Character.

THE interest of the inquiry on which we are about to enter is based on the assumption that differences of national character are mainly due to the influence of education. This we conceive to be true, except in extreme cases, such as those of the inhabitants of torrid or frigid regions, where everything succumbs to the tyranny of physical forces. In such situations, climate shapes education, as, according to Montesquieu, it determines morals and dictates law. But in milder latitudes the difference of physical surroundings is an almost inappreciable element in the formation of character in comparison with influences of an intellectual and moral kind. Much, for example, is said about the inspiration of mountain scenery—an inspiration felt most sensibly, if not most effectively, by those who see the mountains least frequently—but, as John Foster remarks, the character of a lad brought up at the foot of the Alps is a thousandfold more affected by the companions with whom he associates than by the mountains that rear their heads above his dwelling.

The peculiar character of the Chinese—for they have a character which is one and distinct—is not to be accounted for by their residence in great plains, for half the empire is mountainous. Neither is it to be ascribed to their rice diet, as rice is a luxury in which few of the northern population are able to indulge. Still less is it to be referred to the influence of climate, for they spread over a broad belt in their own country, emigrate in all directions, and flourish in every zone. It is not even explained by the unity and persistency of an original type, for in their earlier career they absorbed and assimilated several other races, while history shows that at different epochs their own character has undergone remarkable changes. The true secret of this phenomenon is the presence of an agency which, under our own eyes, has shown itself sufficiently powerful to transform the turbulent nomadic Manchoo into the most Chinese of the inhabitants of the Middle Kingdom. The general name for that agency, which includes a thousand elements, is education. It is education that has imparted a uniform stamp to the Chinese under every variety of physical condition; just as the successive sheets of paper applied to an engraving bring away, substantially, the same impression, notwithstanding differences in the quality of the material.

In this wide sense we shall not attempt to treat the subject, though it may not be out of place to remark that the Chinese themselves

employ a word which answers to education with a similar latitude. They say, for instance, that the education of a child begins before its birth. The women of ancient times, say they, in every movement had regard to its effect on the character of their offspring. This they denominate *khao*, reminding us of what Goethe tells us in his autobiography of certain antecedents, which had their effect in imparting to him

"That concord of harmonious powers which forms the soul of happiness."

All this, whatever its value, belongs to physical discipline. We shall not go so far back in the history of our typical Chinese, but, confining ourselves strictly to the department of intellectual influences, take him at the time when the young idea first begins to shoot, and trace him through the several stages of his development until he emerges a full fledged academician.\*

### 2.—Home Education.

With us the family is the first school. Not only is it there we make the most important of our linguistic acquirements, but with parents who are themselves cultivated there is generally a persistent effort to stimulate the mental growth of their offspring to develop reason, form taste, and invigorate the memory.

In many instances parental vanity applies a spur where the curb ought to be employed, and a sickly precocity is the result; but in general a judicious stimulus addressed to the mind is no detriment to the body, and it is doubtless to the difference of domestic training rather than to race that we are to ascribe the early awaking of the mental powers of European children as compared with those of China. The Chinese have, it is true, their stories of infant precocity—their Barrettons and Chattertons. They tell of Li-muh, who, at the age of seven, was thought worthy of the degree of *tsin-shi*, or the literary doctorate, and of Hio-tsin, "the divine child," who, at the age of ten, composed a volume of poems, still in use as a juvenile textbook. But these are not merely exceptions; they are exceptions of rarer occurrence than among us. The generosity of Chinese children do not get their hands and feet so soon as ours, because, in the first months of their existence, they are tightly swathed and afterwards overloaded with cumbersome garments. The reason for their tardier mental development is quite analogous. European children exhibit more thought at five than Chinese children of twice that age. This is not a partial judgment, nor is the fact to be accounted for by a difference of race; for in mental capacity the Chinese are, in my opinion, not inferior to the "most favoured nation." Deprive our nurseries of those speaking pictures that say so much to the infant eye; of infant poems, such as those of Watts and Harbauld; of the sweet music that impresses those poems on the infant mind; more than all, take away those Bible stories and scraps of history which excite a thirst for the books that contain them, and what a check upon mental growth, what a deduction from the happiness of childhood! With us the dawn of knowledge precedes the use of books, as the rays of morning

\* For an account of the Hanlin or Imperial Academy, see the *North American Review* for July, 1874, where much may be found to supplement the present paper. The same periodical (some time in 1870) contains an article by the present writer on "Civil Service Competitive Examinations in China."

refracted by the atmosphere and glowing with rosy hues, anticipate the rising of the sun. In China there is no such accommodating medium, no such blushing aurora. The language of the fireside is not the language of the books.

Mothers and nurses are not taught to read nor are fathers less inclined than with us to leave the work of instruction to be begun by the professional teacher. This they are the more disposed to do, as an ancient maxim, sanctioned by classic authority, prohibits a parent being the instructor of his own children; still, some fathers, yielding to better instincts, do take a pride in teaching their infant sons; and some mothers, whose exceptional culture makes them shine like stars in the night of female ignorance, have imparted to their children the first impulse in a literary career.

How many of those who have obtained seats in the literary Olympus were favoured with such early advantages, it is impossible to ascertain. That the number is considerable, we cannot doubt. We remember hearing of two scholars in Chekiang, who were not only taught the mechanical art of writing but the higher art of composition by an educated mother, both of them winning the honours of the academy.

As another instance of the same kind, the memoirs of the academy embalm the memory of such a noble mother, along with the name of her illustrious son, the Emperor Kienlung, with vermilion pencil, celebrating the talents of the one and the virtues of the other.

Dropping the "meed of a melodious tear" on the grave of an eminent literary servant, Chien-chen-keun, a member of the Hanlin, the Emperor says: "He drew his learning from a hidden source; a virtuous mother imparting to him her classic lore." In the prose obituary prefixed to the verses, His Majesty says: "Chien's mother, Lady Chen, was skilled in ornamental writing. In his boyhood it was she who inspired and directed his studies. He had a painting which represented his mother as holding a distaff and at the same time explaining to him the classic page. I admired it, and inscribed on it a complimentary verse."

A graceful tribute from an exalted hand, worth more in the estimation of the Chinese than all the marble or granite that might be heaped upon her sepulchre.

### 3.—Commencement of School Life.

In general, however, a Chinese home is not a hot-bed for the development of mind. Nature is left to take her own time, and the child vegetates until he completes his seventh or eighth year. The almanac is then consulted, and a lucky day chosen for inducting the lad into a life of study. Clad in festal robe, with tasseled cap, and looking a mandarin in small, he sets out for the village school, his face beaming with the happy assurance that all the stars are shedding kindly influences and his friends predicting that he will end his career in the Imperial Academy. On entering the room he performs two acts of worship: the first is to prostrate himself before a picture of the Great Sage, who is venerated as the fountain of wisdom, but is not supposed to exercise over his votaries anything like a tutelary supervision. The second is to salute with the same fogms, and almost equal reverence, the teacher who is to guide his inexperienced feet in the pathway to knowledge. In no country is the office of

teacher more revered. Not only is the living instructor, saluted with forms of profoundest respect, but the very name of teacher, taken in the abstract, is an object of almost idolatrous homage. On certain occasions it is inscribed on a tablet in connection with the characters for heaven, earth, prince, and parents,—as one of the five chief objects of veneration, and worshipped with solemn rites. This is a relic of the primitive period, when books were few and the student dependent for everything on the oral teaching of his sapient master. In those days, in Eastern as well as Western Asia and Greece, schools were peripatetic, or (as Jeremy Taylor says of the Church in his time) ambulatory. Disciples were wont to attend their master by day and night, and follow him on his peregrinations from state to state, in order to catch and treasure up his most casual discourses.

As to the pursuit of knowledge, they were at a great disadvantage, compared with modern students, whose libraries contain books by the thousand, while their living teachers are counted by the score. Yet, the student-life of those days was not without its compensating circumstances. Practical morality, the formation of character, was the great object, intellectual discipline being deemed subordinate, and in such a state of society physical culture was, of course, not neglected. The personal character of the teacher made a profound impression on his pupils, inspiring them with ardour in the pursuit of virtue; while the necessity of learning by question and answer excited a spirit of inquiry, and favoured originality of thought. But now all this is changed, and the names and forms continue without the reality.

A man who never had a dozen thoughts in all his life sits in the seat of the philosophers and receives with solemn ceremony the homage of his disciples. And why not? For every step in the process of teaching is fixed by unalterable usage. So much is this the case, that in describing one school I describe all, and in tracing the steps of one student I point out the course of all; for in China there are no new methods of short roads.

In other countries, a teacher, even in the primary course, finds room for tact and originality. In those who dislike study, a love of it is to be inspired by making "knowledge pleasant to the taste;" and the dull apprehension is to be awakened by striking and apt illustrations, while, to the eager and industrious, steps to Parnassus are, if not made easy, at least to be pointed out so clearly that they shall waste no strength in climbing by wrong paths. In China there is nothing of this. The land of uniformity, all processes in arts and letters are as much fixed by universal custom as is the cut of their garments or the mode of wearing their hair. The pupils all tread the path trodden by their ancestors of a thousand years ago, nor has it grown smoother by the attrition of so many feet.

### 4.—Stages of Study.

The undergraduate course may be divided into three stages, in each of which there are two leading studies:

In the first the occupations of the student are committing to memory (not reading) the canonical books and writing an infinitude of diversely formed characters, as a manual exercise.

In the second, they are the translation of his text books (i.e., reading) and lessons in composition.

In the third, they are belles lettres and the composition of essays. Nothing could be more dreary than the labours of the first stage. The pupil comes to school, as one of his books tells him, "a rough gem, that requires grinding;" but the process is slow and painful. His books are in a dead language, for in every part of the empire the style of literary composition is so far removed from that of the vernacular speech that books when read aloud are unintelligible even to the ear of the educated, and the sounds of their characters convey absolutely no meaning to the mind of a beginner. Nor, as a general thing, is any effort made to give them life by imparting glimpses of their signification. The whole of this first stage is a dead lift of memory, unalleviated by the exercise of any other faculty. It is something like what we should have in our Western schools if our youth were restricted to the study of Latin as their sole occupation and required to stow away in their memory the contents of the principal classics before learning a word of their meaning.

The whole of the four books and the greater part of the five classics are usually gone through in this manner, four or five years being allotted to the cheerless task. During all this time the mind has not been enriched by a single idea. To get words at the tongue's end and characters at the pencil's point is the sole object of this initial discipline. It would seem, indeed, as if the wise ancients who devised it had dreaded nothing so much as early development, and, like prudent horticulturists, resorted to this method for the purpose of heaping snow and ice around the roots of the young plant to guard against its premature blossoming. All the arrangements of the system are admirably adapted to form a safeguard against precocity. Even the stimulus of companionship in study is usually denied, the advantages resulting from the formation of classes being as little appreciated as those of other labour-saving machinery. Each pupil reads and writes alone, the penalty for failure being so many blows with the ferule or kneeling for so many minutes on the rough brick pavement which serves for a floor.

At this period fear is the strongest motive addressed to the mind of the scholar; nor is it easy to say how large a share this stern discipline has in giving him his first lesson in political duty, viz., that of unquestioning submission, and in rendering him cringing and pliant toward official superiors. Those sallies in innocent humour and venial mischief so common in Western schools are rarely witnessed in China.

A practical joke in which the scholars indulged at the expense of their teacher I have seen represented in a picture, but never in real life. The picture, the most graphic I ever saw from a Chinese pencil, adorns the walls of a monastery at the Western Hills, near Peking. It represents a village school, the master asleep in his chair and the pupils playing various pranks, the least of which, if the tyrant should happen to awake, would bring down his terrible baton. But notwithstanding the danger to which they expose themselves, two of the young unfrightened stand behind the throne, threatening to awake the sleeper by tickling his ear with the tail of a scorpion.

So foreign indeed is this scene from the habits of Chinese school-boys, that I feel compelled to take it in a mystic rather than a literal signification. The master is reason, the boys are the passions, and

the scorpion conscience. If passion gets at the ear of the soul while reason sleeps, the stings of conscience are sure to follow those

"Pangs that pay for a spendthrift thrill  
With bitter usury."

Thus understood it conveys a moral alike worthy of Christian or Buddhist ethics. Severity is accounted the first virtue in a pedagogue; and its opposite is not kindness, but negligence. In family schools, where the teacher is well watched, he is reasonably diligent and sufficiently severe to satisfy the most exacting of his patrons. In others, and particularly in charity schools, the portrait of Squeers in Nicholas Nickleby would be no caricature. With modifications and improvements in the curriculum, a teacher has nothing to do. His business is to keep the mill going, and the time-honoured argument *à posteriori* is the only persuasion he cares to appeal to.

This arctic winter of monotonous toil is passed, a more auspicious season draws on the youthful underling. The key of the cabals which he has been so long and so blindly acquiring is put into his hands. He is initiated in the translation and exposition of those sacred books which he had previously stored away in his memory, as if apprehensive lest another tyrant of *Tsin* might attempt their destruction. The light however is let in but sparingly, as it were, through chinks and rifts in the long dark passage. A simple character here and there is explained, and then, it may be after a lapse of a year or two, the teacher proceeds to the explication of entire sentences. Now for the first time the mind of the student begins to take in the *thoughts* of those he has been taught to regard as the oracles of wisdom. His dormant faculties wake into sudden life, and, as it would seem, unfold the more rapidly in consequence of their protracted hibernation.

To him it is like

"The glorious hour when spring goes forth,  
O'er the bleak mountains of the shadowy north,  
And with one radiant glance, one magic breath,  
Wakes all things lovely from the sleep of death."

The value of this exercise can hardly be over-estimated. When judiciously employed it does for the Chinese what translation into and out of the dead languages of the West does for us. It calls into play memory, judgment, taste, and gives him a command of his own vernacular which, it is safe to assert, he would never acquire in any other way. Yet even here I am not able to bestow unqualified commendation. This portion of the course is rendered too easy; as much too easy as the preceding is too difficult. Instead of requiring a lexicon in hand, to quarry out the meaning of his author, the teacher reads the lessons for him and demands of him nothing more than a faithful reproduction of that which he has received; memory again, sheer memory! Desirable as this method might be for beginners, when continued, as the Chinese do through the whole course, it has the inevitable effect of impairing independence of judgment and fertility of invention; qualities for which Chinese scholars are by no means remarkable and for the deficiency of which they are no doubt indebted to this error of school room discipline. Simultaneously with translation the student is initiated in the art of composition, an art which, in any language, yields to nothing but practice. In Chinese

it is beset with difficulties of a peculiar kind. In the majority of cultivated languages the syntax is governed by rules, while inflections, like mortise and tenon, facilitate the structure of the sentence.

Not so in this most primitive form of human speech. Verbs and nouns are undistinguished by any difference of form, the verb having no voice, mood, or tense, and the noun neither gender, number, nor person. Collocation, is everything: it creates the parts of speech and determines the signification of characters. The very simplicity of the linguistic structure thus proves a source of difficulty, preventing the formation of any such systems of grammatical rules as abound in most inflected languages, and throwing the burden of acquisition on the imitative faculty; the problem being not the erection of a fabric from parts which are adjusted and marked, but the building of a structure with cobble stones.

If these uniform, unclassified atoms were indifferent to position, the labour of arrangement would be nothing and style impossible. But most of them appear to be endowed with a kind of mysterious polarity, which controls their collocation and renders them incapable of companionship except with certain characters, the choice of which would seem to be altogether arbitrary. The origin of this peculiarity it is not difficult to discover. In this, as in other things among the Chinese, usage has become law. Combinations which were accidental or optional with the model writers of antiquity, and even their errors, have, to their imitating posterity, become the *jus et norma loquendi*. Free to move upon each other when the language was young and in a fluid state, its elements have now become crystallized into invariable forms. To masters this pre-established harmony, without the aid of rules, is the fruit of practice and the labour of years.

The first step in composition is the yoking together of double characters. The second is the reduplication of these binary compounds and the construction of parallels—an idea which runs so completely through the whole of Chinese literature that the mind of the student requires to be imbued with it at the very outset. This is the way he begins: The teacher writes, "wind blows;" the pupil adds, "rain falls;" the teacher writes, "rivers are long;" the pupil adds, "seas are deep," or "mountains are high," &c.

From the simple subject and predicate, which in their rude grammar they describe as "dead" and "living" characters, the teacher conducts his pupil to more complex forms, in which qualifying words and phrases are introduced. He gives as a model some such phrase as "The Emperor's grace is vast as heaven and earth," and the lad matches it by "The Sovereign's favour is profound as lake and sea." These couplets often contain two propositions in each member, accompanied by all the usual modifying terms; and so exact is the symmetry required by the rules of the art that not only must noun, verb, adjective, and particle respond to each other with scrupulous exactness, but the very tones of the characters are adjusted to each other with the precision of music.

Begun with the first strokes of his untaught pencil, the student, whatever his proficiency, never gets beyond the construction of parallels. When he becomes a member of the institute or a minister of the imperial cabinet, at classic festivals and social entertainments, the composition of impromptu couplets, formed on the old model,

constitutes a favourite pastime. Reflecting a poetic image from every syllable, or concealing the keen point of a cutting epigram, they afford a fine vehicle for sallies of wit; and poetical contests such as that of Melibæus and Menalcæus are in China matters of daily occurrence.

If a present is to be given, on the occasion of a marriage, a birthday, or any other remarkable occasion, nothing is deemed so elegant or acceptable as a pair of scrolls inscribed with a complimentary distich.

When the novice is sufficiently exercised in the "parallels" for the idea of symmetry to have become an instinct, he is permitted to advance to other species of composition which afford freer scope for his faculties. Such are the *shutials*, in which a single thought is expanded in simple language, the *lun*, the formal discussion of a subject more or less extended, and epistles addressed to imaginary persons are adapted to all conceivable circumstances. In these last, the forms of the "complete letter writer" are copied with too much servility; but in the other two, substance being deemed of more consequence than form, the now fledged thought is permitted to essay its powers and to expatiate with but little restraint.

In the third stage, composition is the leading object, reading being wholly subsidiary. It takes for the most part the artificial form of verse, and of a kind of prose called *wen-chang*, which is, if possible, still more artificial. The reading required embraces mainly rhetorical models and sundry anthologies. History is studied, but only that of China, and that only in compends; not for its lessons of wisdom, but for the sake of the allusions with which it enables a writer to embellish classic essays. The same may be said of other studies: knowledge and mental discipline are at a discount and style at a premium. The goal of the long course, the flower and fruit of the whole system, is the *wen-chang*; for this alone can insure success in the public examinations for the civil service, in which students begin to adventure soon after entering on the third stage of their preparatory course.

The examinations we reserve for subsequent consideration, and in that connexion we shall notice the *wen-chang* more at length. We may however remark, in passing, that to propose such an end as the permanent object of pursuit must of necessity have the effect of rendering education superficial. In our own universities surface is aimed at rather than depth; but what, we may ask, besides an empty glitter would remain, if none of our students aspired to anything better than to become popular newspaper writers? Yet successful essayists and penny-a-liners require as a preparation for their functions a sub-stratum of solid information. They have to exert themselves to keep abreast of an age in which great facts and great thoughts vibrate instantaneously throughout a hemisphere. But the idea of progressive knowledge is alien to the nature of the *wen-chang*. A juster parallel for the intense and fruitless concentration of energy on this species of composition is the passion for Latin verse, which was dominant in our halls of learning until dethroned by the rise of modern science.

(To be continued).

## DR. CARPENTER ON EDUCATION.

Dr. CARPENTER, in opening the proceedings at the Prize Distribution held in February last, at the College of Preceptors, said—Ladies and Gentlemen, it gave me great pleasure to respond to the invitation which was kindly conveyed to me from the Council of this great and most valuable institution that I should preside on this occasion; for, as most of you know, I have been, in one way or another, connected with education all my life. I began very early as a professor in medical schools, and continued to take part in medical instruction for twenty-five years, and then it was my good fortune to be called to occupy a position in which my mind has constantly been directed not only to medical, but to general education, and in which I have been the instrument of certainly one of the most enlightened educational bodies in this country, the Senate of the University of London, in carrying out the important objects of that great national institution. I may go a little further back, if you will allow me, in personal reminiscences, and say that it was my good fortune to be trained by one of the most advanced educators of his time, my own father, who wrote a treatise on education, which was originally printed as three articles on physical, moral, and intellectual education in Ites's Cyclopædia, which articles were published separately as a work on the "Principles of Education" some 50 years ago; and I do not hesitate to say that that work might be advantageously reprinted at the present time, and consulted by all who are engaged in education; for, looking at it as I have done from time to time, I find how remarkably it anticipated the views which are now currently received, and upon what sound principles of psychological knowledge the practice of education, as he developed it, was based. For I hold as the result of my own inquiries, which many of you know have taken that special direction for many years past, that a knowledge of the constitution of the human mind must be the basis of all intelligent education; for unless we know exactly what our objects are, we cannot effectually form our plans to accomplish those objects; and therefore I feel it to be one of the most valuable parts of the system of the College of Preceptors, that it is developing the principles of teaching on the basis of the study of the constitution of the human mind. I am extremely glad to find that a course on this subject by my very able and distinguished friend, Professor Crook Robertson, is now in progress; and if I had to form the programme of the course, it would have been almost identical with that which he has laid down.

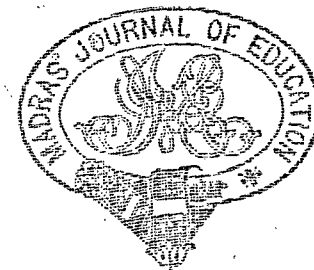
If we go a little into this question, you will see at once that we must take the natural order of the development of the faculties as the basis of all our education. The child begins as an observing animal, so to speak, taking notes of things and putting questions as to their meaning. This power of observation, and the desire and curiosity for some kind of explanation of what is seen and felt and heard, is the basis upon which we build all our cultivation of the higher faculties; and here, as it appears to me, comes in the importance of the very great and fundamental principle of giving a thorough training to those who are the child's teachers in those first years of life. I have always held that the thorough education of women is of the utmost importance to the human race, not only because women constitute more than half the race in this country, and there-

ore, if we leave them uneducated or improperly educated, we only educate rather less than one-half of the population;—not only because they constitute more than one-half of our population, but because with them rests that to which I always attach the very highest importance, the early training of the child's mind in habits of observation—in habits of carrying on simple processes of reasoning suitable to its capacity, and in habits of attention. It is in the early laying of the foundation of the habit of attention that I consider the very basis of all education lies; because, unless we have the power of applying our minds to a subject, we really lose a large proportion of the advantage of the teaching we may receive. It is related of Sir Isaac Newton, when some one asked him how it was that he made such wonderful discoveries, and had done so much more than other men had done in the great subjects of mathematics, gravitation, optics—in fact, every subject to which he applied himself;—he said, "By always thinking about them." Now, always thinking about a thing does not necessarily make a man a master of it; but if he has the capacity for mastering it, it is that which enables him to master it; and I have seen many most valuable minds I might say ruined by the want of that power of definite and close attention which would have given them the means of thoroughly mastering the subject to which they applied themselves. Now the faculty may be cultivated in the child at a very early period. I am far from wishing to see a child of five years old kept even for a continuous hour to a lesson; but there is a variety of modes in which the habit of attention may be cultivated by even five minutes at a time; and the fixation of attention and the encouragement of the child's mind to fix its attention for even five minutes at a time is a most valuable discipline. Again, I hold that it is upon the early influences brought to bear on the child in the nursery, that the foundation of all moral character is laid; by the cultivation of the higher part of our moral nature and the restraints laid upon the lower, and especially upon the tendency to passionate impulses, which so many children give way to, and the regulation of which, far more than complete repression, is that which we should aim at—because we all know that these passions are simply exaggerations of natural and wholesome impulses. The whole of the foundation of education, I am satisfied, ought to be laid in the first five years of life, when the child is almost entirely under feminine influence; and it is because I consider that with woman lies the formation of the character of the child, that I regard woman as claiming on our parts the very highest culture and the highest mental discipline—that which shall enable them to be the best teachers of the next generation. I know that there is an aspiration among some women to be the equals and the rivals of men in the active business of life. I would not discourage that aspiration on the part of any woman who thought she had a special vocation; but certainly it appears to me that the general function of woman in the world is rather to leave man to fight the battle of life, and for woman to be the helpmeet of man, and, if she does not think that enough, to be the mother of his children. The mother, I mean, in the highest sense; not merely physically, but in that early development and training of the child's mind to which I have referred, and to which, as I have said, I attach the very highest importance.

Let us now go on a step further. A young child comes to school

then we find that to the observing faculties, which are still very active, is added a higher measure of reasoning faculties; and it is to the education—the drawing forth, for that is the meaning of the word education—of the reasoning faculties that we next apply ourselves. Now here, again we find the child's mind brought into contact with a new variety of objects; and I can remember the time when in many, in fact in most schools—and it is still so in a great many—the mind is entirely taken off any further contact with the external world than what it gets in play; and a boy or girl is put into the school-room, and set to books, and to cultivate itself upon what is, by itself, very dry food,—mere abstractions. I say, “taken by itself”; it is very good food in combination with others; but what I complain of is, in the old system of education, all the powers of observation, and the powers of reasoning upon observation, are entirely put aside. If we take the study of languages, there we have the language of pure ideas. Words are the symbols of ideas, and not of things. Then we come to mathematics. Again pure abstractions. We build up certain intellectual conceptions, the conception of a straight line, the conception of a circle, and so on; and these are pursued and followed out very often without really any conception on the part of the pupil of what this all means. Some will take it in, and will bring it to bear in making geometrical figures and little artificial constructions of various kinds; but the great majority merely take these things in as something to be learned, and as ideas which have to be expanded and developed, as it were, into other ideas. I remember myself perfectly well going as far as the forty-seventh proposition of the first Book of Euclid, before I had a distinct conception of what that wonderful proposition taught; and when I was lucky enough to be presented by a friend with a little sort of geometrical toy, in which the thing was worked out by little pieces of wood being put together, showing that exactly the same set of little bits of wood that could be put together to make the two squares on the two sides of a triangle, would, when put together in another way, make the square on the hypotenuse,—it was quite a new light to me to find that the proposition was really more than an idea—that it was a practical fact. So in the same manner, even in early childhood, the knowledge of squares and cubes may be obtained, and should be obtained, by every child. It is one of the most valuable parts of the Kinder-garten system, that such knowledge is acquired in early childhood; but it should not stop there, it should be introduced into the teaching of every school. I believe that at the present time ninety-nine out of every hundred who go to ordinary schools really have no proper tangible conception of what a cube is; and how it is that in the square measures and cube measures which children have to learn by heart, a square foot contains 144 square inches, and that a cubic yard contains 27 feet. The other day I was staying with a friend who had some children in a Kinder-garten school, and they had, as I had the good fortune to have in my early days, a box of cubes; and that box of cubes led me to test these children with the cube of 2, the cube of 3, and 4, and so on.

(To be Continued.)



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### THE MONTH.

We have often in this Journal questioned the propriety of setting so much English Poetry to our Matriculation and Preparatory Matriculation classes. It is to this practice that much of the fine writing and stilted pedantry of our Hindu pupils is owing. Now that the Viceroy has called attention to the mistake that English teachers have so long made in this country, we may hope to see some amendment. We must remember that Hindu Scholars are in a very different position from our pupils in England. An English boy can generally judge instinctively between language that is obsolete, and words and idioms in current use, but a Hindu youth with little or no experience in colloquial usage, naturally reproduces in his conversation and familiar compositions the language of the English books he reads. Observing the great aptitude of Hindu pupils in reciting poetry from Shakespeare and other English authors, Lord Lytton addressing the boys at a school distribution of prizes remarked:—

“This fact has suggested to me one reflection which I wish to mention, not so much to you boys as to your instructors. Shakespeare is a writer whom no one, boy or man, can study without advantage. But the language of Shakespeare has long ceased to be

vernacular. In short, for all common conversational purposes it is obsolete. Now, I think that what young native students primarily need to acquire from their study of English, at least as regards their oral use of the language, is a correct and pleasing pronunciation of the vocabulary now in daily use. Of course, I do not mean English slang, but the English language as it is spoken every day by educated Englishmen and Englishwomen. I don't think you are likely to acquire this, and you are certainly not likely to correct your deficiencies of pronunciation, if you confine yourselves to recitations of Shakespeare."

We commend the foregoing remarks of Lord Lytton to the Syndicates of our Indian Universities, to our Directors of Public Instruction, to Inspectors and Principals of schools, and to all who have the direction of the English studies of Hindus.

A CORRESPONDENT of one of the Madras dailies remarks that "the cruelty of the Madras University was never more conspicuous than in the selection of the English text for this year's Matriculation Examination. . . . The quantity of the English to be gone through is one-third too much and the difficulty of one piece, viz.,—Scott's Autobiography—is too great for the sixth class lad to overcome."

We fully believe that this gives the general opinion of the English masters who have to teach the Matriculation classes this year. The careless phrases and the long, involved, and in many cases, inaccurate constructions in the Autobiography (the most difficult of all Scott's prose writings as regards style) would make the book a laborious task even to candidates for degrees, and to all but the very best of the pupils in our Matriculation classes the task is insurmountable. We should be glad to see a notification in the Fort St. George Gazette, that in consequence of the difficulty of the first of the prose selections, a smaller portion (say 1,500 lines) of the second piece (Cook's First Voyage) would be accepted for examination. It would be far better to aim at thoroughness than to go through the whole of the prose pieces in a careless manner.

We learn that the Reverend A. Alexander, M.A., from Scotland to undertake the duties of the P. vacant in the Madras Christian College by the of the Rev. Mr. Macdonald. The Principal, t Miller, we also learn returns to India, in Dr Miller's heart is so thoroughly in his work

brilliant prospects in his native country have failed to tempt him to remain there.

It is stated that Dr. Leisner, of Lahore, intends to return to England in order to open an institution for young Hindoos who are preparing for the Indian Civil Service Examinations. Care will be taken that residence in the Institute shall not entail loss of caste. There will be Hindoo cooks, and even water from the Ganges. Similar arrangements will be made to meet the case of Mohammedan pupils. The Institution is to be supported at first by subscriptions from native gentlemen and noblemen.

A CORRESPONDENT of the *Times*, writing on Indian Civil Service Examinations, says:—"The last entrance examination for the Indian Civil Service under the old system is fast drawing to a close, and therefore a few remarks on the new system of selection may not be out of place. First, as to the subjects. It will scarcely be denied that here the change is for the better. In order to exclude the mere smatterers, a deduction will be made from the marks—<sup>this is as it should be,</sup> in Mathematics and English Composition. This is as it should be, for if a candidate knows thoroughly, say, Euclid, Algebra, and Trigonometry, ~~then~~ his knowledge of Mathematics is complete, and he should receive credit for that knowledge. In a ~~low degree~~ it is so with English Composition. A youth may write ~~his native language~~ grammatically or he cannot. If he cannot, he deserves no credit whatever; if he can, he deserves credit irrespective of the matter of his essay. Again, French and German occupy a more prominent place in the new scheme, as no doubt they should do. Looking at the marks assigned to each, it is easy to see that the subjects of the examination are in the following order of importance:—1, Mathematics; 2, Latin; 3, Greek; 4, French, German, Arabic, Sanskrit, and Chemistry (all equal); 5, Italian, &c. I do not mention English Composition, for every candidate will try his hand at that. In the new scheme the sciences are rather at a discount, and a clean sweep has been made of Geology and Mineralogy. Secondly, as to the candidates. They must be under nineteen years of age; thus there seems a danger of choosing precocious youths rather than those who reach maturity a year or two later. After passing the entrance examination, a candidate will have an inducement to go to some university, but when there he will probably associate with other selected candidates, as he does now in London, or he will get into some fast set, and do no work at all. As to his going through a university course of study, this would be too much to expect, for no man can serve two masters in this case, unless he be a very clever fellow indeed. In the third place, these new regulations will please the public schools, as no doubt they were designed to do, for the public schools will be able to send up successful candidates direct, and the monopoly which two or three establishments have enjoyed for the last seven years will probably come to an end.

The undermentioned army schoolmasters, serving in India, have passed successfully the examination in Hindustani, entitling them to

the grant of the Indian Government:—P. Mulvihill, 2nd battalion 60th Regiment, "Higher Proficiency," 1,500 rupees; R. Pearce, 2nd battalion 22nd Regiment, "Lower Standard," 90 rupees.

ERRATUM.—In the translation of Horace's Ode 6, Book II. given on page 150 of the last issue of this Journal, in line 20 for "Fruits of Venus" read "Grapes of Falernus."

MR. GEORGE DUNCAN'S popular little Geography of India, published by Messrs. Higginbotham and Co., has we observe reached a ninth Edition.

Messrs. ADDISON AND Co. have forwarded us *The third English Edition of "The Addison Press Series"* for the use of Indian Students. The reader is indebted to Mr. C. M. Barrow and is designed, as the preface informs us, to replace the "Moral Class Book," which is very unsystematically arranged and comparatively dear. The special features of the present book are its "arrangement in sections and lessons and the familiar Dialogues; which is intended to be learnt by heart." The book is compiled with care and is well printed on good paper, and at six annas, is very cheap. The introductory "Directions to Masters" are admirable, and should be carefully read over by every Teacher. We recommend the book to aided schools in want of a good and cheap English reading book.

We understand that the Secretary of State has approved and confirmed certain changes proposed by the Government of India last February in the educational establishment of Mysore. By these arrangements, the office of Director of Public Instruction has been placed in the 3rd class of the Graded Education Service instead of the 2nd; and as the present Director already draws Rs. 1,000 per mensem, or Rs. 50 in excess of the maximum of the 3rd class, he has been permitted to continue to draw it as a personal allowance. His successors, however, will only draw the salary prescribed for the grade. The office of Senior Inspector of Schools, and that of the Principal of the Bangalore Central College have been placed in the 4th or lowest class of the Graded Service, with the salary of that class, viz., Rs. 500 per mensem, rising to Rs. 750, the present maximum being Rs. 700. The salaries of some of the subordinate officers of the Department, including the Head Masters of the Mysore and Shimoga High Schools, which are now Rs. 250 rising to Rs. 350 per mensem, have been raised to a maximum of Rs. 400. This has been done on the urgent representation of the local authorities in view of the success of the two schools. These arrangements do not involve any large increase of charge against the revenues of Mysore, as the reduction in the pay of the Directorship of Public Instruction nearly makes up for the increase elsewhere. — *Madras Times*.

## Subjects appointed by the Madras University\*

FIRST EXAMINATION IN ARTS.—1880

English.

Shakespeare—*Midsummer Night's Dream*.

Milton—*Paradise Lost*, Book V.

Tennyson—*Aylmer's Field*.

Austen—*Pride and Prejudice*.

Macanlay—*Barère*.

Sanskrit.

Bhoja Champu—First three Kāndas.

Uttarāmacharitra—(Prākṛit passages to be omitted).

Grēk.

Sophocles—*Electra*.

Herodotus—Lib. VI and VII.

Latin.

Vergil—*Æneid*, Lib IX.

Horace—*Satires*, excepting the second, fourth, fifth, and eighth of the

First Book, and the fifth and seventh of the Second Book.

Cicero—In Catilinam—The first and second Orations.

Livy—Lib I. and the Introduction.

Arabic.

Ikwān-us-Safa.

Nafhat-ul-Yemen.

Persian.

Anwar-i-Shehīlī—Chapters 7, 8, and 9.

Sikandar Namah—(To the end of the Death of Dara).

Tamil.

Naishadham—From Nagarainupadalam to the end. (Government Depot Edition).

Nādiyār—From Chapter 31 to 37.

Uttarāmayanam—(Edited by Srinivasaragavachariyar).

Telegu.

Adi Parva—second and third Asvāsas. (S. B. V. 1a S Edition)

Banganāda Rāmāyana—Sandra Kānda, second half.

Sandhi—Dy Viresulingam.

Kanarese.

Vrikshabendra Vijja—second, third, and fourth Chapters.

Bhrānta Vilāsa.

Malayalam.

Rāmāyanam—Aranya Kādam.

Bhāratam—Mausala Parvam.

Kirātam—Katha Kali.

Urdu.

Sarash-i-Sukhum.

Divan-i-Rind—To the Radif of "Sheen" inclusive.

Oriya.

Charuparba—Part II. (By Bechhand Patnaick).

Baghu Vansa—

Sutton's History of Orissa—Part II.

\*The subjects appointed for Matriculation 1879 are given in the Journal for last month.



## B.A. DEGREE EXAMINATION—1881.

*English.*

- Shakespeare—King Lear.  
 Byron—English Bards and Scotch Reviewers.  
 Tennyson—Gareth and Lynette.  
 Mill—Representative Government, Chapters I—VII inclusive, XIV, and XVI—XVIII inclusive.  
 Holmes—The Autocrat of the Breakfast Table, Chapters I—V inclusive.  
 Selections in Old English Prose—  
 Sir John Mandeville—Voyage—as in Morris and Skeat, pp. 161—174.  
 John of Trevisa—The Norman Invasion—as in Morris and Skeat, pp. 243—247.  
 Sir Thomas Malory—Le Morte d'Arthur as in Skeat, pp. 77—87.  
 Lord Berners—Translation of Froissart as in Skeat, pp. 153—165.

*Sanskrit.*

- Kadambari.  
 Mudrarākshasa.

*Greek.*

- Sophocles—Philoctetes.  
 Demosthenes—De Corona.

*Latin.*

- Lucretius—de Rerum Natura—Lib. III.  
 Terence—Adelphi.  
 Cicero—Pro Caelio.  
 Tacitus—Annales—Lib. I and II.

*Persian.*

- Nal-daman—By Fyzi.  
 Vakai-i-niamat Khan-i-ili.

*Tamil.*

- Rāmāyaṇam—Bālakāṇḍam, first eight Padalams (M. S. B. V. L. Society's Edition).  
 Kural—From Chapter 46 to 65.  
 Silapadigāram—From Kāḍai 7th to 10th inclusive.

*Telugu.*

- Vasu Charitra—Fifth Canto.  
 Harivaṃsa—Part II, Canto 10th.  
 Śrīṅgāra Naishada—Second Canto.

*Kannarise.*

- Shabarasaṃhita Vīṇasā—Second half.  
 Prakṛjyāṇa Mālika—pp. 294—325 and pp. 331—343.

*Malayalam.*

- Bhāratam—Udyōga and Bhishma Parvams.  
 Śaṇṭānagopālam—Katha Kali.

*Urdu.*

- Titism-i-Heirat.  
 Gulzar-i-Surur—(By Rajab Ali Beg).  
 Divan-i-Ghalib-i-Dehlavi.

*Uriya.*

- Mahabharat—(Calcutta School Book Society's Edition).  
 Batris Singhason.  
 Sutton's History of Orissa—Part III.

## M.A. DEGREE EXAMINATION—1881.

*English.*

- Chaucer—The Knight's Tale.  
 Shakespeare—Cymbeline.  
 —Sonnets.  
 Massinger—New Way to Pay Old Debts.  
 Milton—Tractate on Education.  
 —Areopagitica.  
 Byron—Marino Faliero.  
 Shelley—Hellas.  
 Tennyson—Enid and Guinevere.  
 De Quincey—The Lake Poets.  
 Hallam—Literature of Europe, Part II (omitting Chapters I, II), Part III (omitting Chapters I, II, IX).  
 Carlyle—The Latter Day Pamphlets.

*Sanskrit.*

- Rig-Veda, First Mandala, Hymns XXXVII to XLVIII inclusive (according to the Pada or Samhita Text published by Prof. Max Müller in 1873) with Sāyana's Commentary.  
 Manu, Books II, VII, VIII.  
 Dāsakumāra-charita.  
 Mricchhakatika.  
 Kālidāsa—Sakuntala.  
 Bhavabhūti—Vīra-Charita.  
 Kalidāsa—Megha-dūta.  
 Vedānta-sāra of Śaṇḍananda.

*Greek.*

- Æschylus—Prometheus Vincetus.  
 —Agamemnon.  
 Homer—Iliad, Lib. XXII—XXIV.  
 Thucydides—Lib. I, II, and III.  
 Aristophanes—Nubes.  
 —Aves.

- Demosthenes—Olynth., I and II.  
 Plato—Phædo.  
 —Gorgias.  
 Aristotle—Eth., Lib. I, II, and III.

*Latin.*

- Vergil—Georg., Lib. IV.  
 Horace—Epistolæ.  
 Plautus—Miles Gloriosus.  
 —Aulularia.  
 Juvenal—Satires I, III, and X.  
 Terence—Adelphi.

- Andria.  
 Cicero—Epistolæ.  
 Livy—Lib. XXI—XXX inclusive.  
 Tacitus—Annal., Lib. I.  
 Pliny—Epistolæ, Lib. VIII, IX, and X.

## HISTORY.

## FIRST EXAMINATION IN ARTS—1880.

- The Early Empire of Rome (from the Assassination of Julius Cæsar to that of Domitian).

## B.A. DEGREE EXAMINATION—1881.

The Age of Louis XV.

## M.A. DEGREE EXAMINATION—1881.

The Character and History of Greek Colonization  
The Revival of Letters.

## ETHICS.

## M.A. DEGREE EXAMINATION—1881.

The Ethics of Aristotle.

Modern Intuitionism and Utilitarianism as affected by the Evolution Theory.

## TRIGONOMETRY WITH SOLUTIONS.

I. Prove that  $\sin 20^\circ \sin 40^\circ \sin 60^\circ \sin 80^\circ = \frac{3}{16}$ .

$$\text{Expression} = \frac{\sqrt{3}}{2} \sin 20^\circ \sin 40^\circ \sin 80^\circ.$$

$$= \frac{\sqrt{3}}{4} \sin 20^\circ (2 \sin 40^\circ \sin 80^\circ) = \frac{\sqrt{3}}{4} \sin 20^\circ (\cos 40^\circ - \cos 120^\circ)$$

$$= \frac{\sqrt{3}}{4} \sin 20^\circ (\cos 40^\circ + \frac{1}{2}) = \frac{\sqrt{3}}{8} (2 \sin 20^\circ \cos 40^\circ + \sin 20^\circ)$$

$$= \frac{\sqrt{3}}{8} \{ \sin 60^\circ - \sin 20^\circ + \sin 20^\circ \} = \frac{\sqrt{3}}{8} \sin 60^\circ = \frac{3}{16}.$$

II. Find  $\theta$  in  $\sin \theta \sin (2\alpha + \theta) + n \cos^2 \alpha = 0$  and shew that it cannot be real unless  $\cos \alpha < \frac{1}{\sqrt{1+n}}$ .

$$\text{Since } \sin \theta \sin (2\alpha + \theta) + n \cos^2 \alpha = 0$$

$$\therefore 2 \sin \theta \sin (2\alpha + \theta) + 2n \cos^2 \alpha = 0$$

$$\therefore \cos 2\alpha - \cos 2(\alpha + \theta) + 2n \cos^2 \alpha = 0.$$

$$\therefore 2 \cos^2 \alpha - 1 - \{ 2 \cos^2 (\alpha + \theta) - 1 \} + 2n \cos^2 \alpha = 0.$$

$$\therefore \cos^2 \alpha - \cos^2 (\alpha + \theta) + n \cos^2 \alpha = 0.$$

$$\therefore \cos^2 (\alpha + \theta) = (1 + n) \cos^2 \alpha.$$

$$\therefore \cos (\alpha + \theta) = \sqrt{1+n} \cos \alpha.$$

If  $\alpha$  is given  $\alpha + \theta$  may be found from this equation and then  $\theta$  may be obtained by subtracting  $\alpha$  from  $\alpha + \theta$ .Since the cosine of any real angle is less than unity  $\cos (\alpha + \theta)$  must necessarily be less than unity if  $\alpha + \theta$  be a real angle, and therefore  $\cos \alpha$  must be less than  $\frac{1}{\sqrt{1+n}}$ .III. Eliminate  $\theta$  from the equations  $\frac{\cos \theta}{\alpha} = \frac{\cos 3\theta}{\beta} = \frac{\cos 5\theta}{\gamma}$ .

$$\text{Now } \frac{\beta}{\alpha} = \frac{\cos 3\theta}{\cos \theta} = \frac{4 \cos^3 \theta - 3 \cos \theta}{\cos \theta} = 4 \cos^2 \theta - 3.$$

$$\therefore 4 \cos^2 \theta = \frac{\beta}{\alpha} + 3 = \frac{\beta + 3\alpha}{\alpha} \quad (1).$$

$$\text{Again } \frac{2 \cos 3\theta \cos 2\theta}{\alpha + \gamma} = \frac{\cos 3\theta}{\beta \cos \theta} \therefore 2 \cos 2\theta = \frac{\alpha + \gamma}{\beta}.$$

$$\therefore 4 \cos^2 \theta = \frac{\alpha + \gamma}{\beta} + 2 = \frac{\alpha + \gamma + 2\beta}{\beta} \quad (2).$$

$$\therefore \frac{3\alpha + \beta}{\alpha} = \frac{\alpha + \gamma + 2\beta}{\beta} \therefore 3\alpha\beta + \beta^2 = \alpha^2 + \alpha\gamma + 2\alpha\beta.$$

$$\therefore \alpha^2 + \alpha\gamma = \beta^2 + \beta\alpha.$$

$$\text{IV. Prove that } \tan\left(\frac{\pi}{4} + \frac{1}{2} \cos^{-1} \frac{a}{b}\right) + \tan\left(\frac{\pi}{4} - \frac{1}{2} \cos^{-1} \frac{a}{b}\right) = \frac{2b}{a}.$$

$$\text{Expression} = \tan\left(\frac{\pi}{4} + \frac{1}{2} \cos^{-1} \frac{a}{b}\right) + \cot\left(\frac{\pi}{4} + \frac{1}{2} \cos^{-1} \frac{a}{b}\right).$$

$$= \frac{2}{\sin\left(\frac{\pi}{2} + \cos^{-1} \frac{a}{b}\right)} = \frac{2}{\cos\left(\cos^{-1} \frac{a}{b}\right)} = \frac{2}{\frac{a}{b}} = \frac{2b}{a}.$$

V. Perpendiculars are drawn from the angles of a triangle ABC on the opposite sides and produced to meet the circumference of the circumscribed circle in  $\alpha, \beta, \gamma$ , prove that

$$\frac{\cos(B-C)}{A\alpha} = \frac{\cos(C-A)}{B\beta} = \frac{\cos(A-B)}{C\gamma} = \frac{2 \Delta ABC}{abc}.$$

From A let AD be drawn perpendicular to BC and let AD be produced to meet the circle in  $\alpha$ .

Then since the angles ABD + BAD = 90°, and the angles ACD, CAD = 90° also.

$$\therefore \angle B + \angle BAD = \angle C + \angle CAD.$$

$$\therefore \angle B - \angle C = \angle CAD - \angle BAD.$$

$$\therefore \cos(B-C) = \cos(\angle CAD - \angle BAD)$$

$$= \cos \angle CAD \cos \angle BAD + \sin \angle CAD \sin \angle BAD$$

$$= \frac{AD}{AC} \frac{AD}{AB} + \frac{CD}{AC} \frac{DB}{AB} = \frac{AD^2 + CD \cdot DB}{AC \cdot AB}.$$

$$= \frac{AD^2 + AD \cdot DA}{AC \cdot AB} = \frac{A\alpha \cdot AD}{AC \cdot AB}.$$

$$\therefore \cos \frac{(B-C)}{A\alpha} = \frac{AD \times BC}{AC \cdot AB \cdot BC} = \frac{2 \Delta ABC}{abc}.$$

Similarly the others are each equal to  $\frac{2 \Delta ABC}{abc}$ .

W. A. MARCAR.

SANSKRIT *versus* THE VERNACULARS.

We are now able to give the two letters of the Native Gentlemen who were in favour of substituting Sanskrit for the Vernaculars during the late controversy in the Senate:—

TO THE REGISTRAR OF THE UNIVERSITY OF MADRAS.

SIR,—The undersigned request that you will be kind enough to lay the following letter before the Members of the Syndicate and Senate for their serious consideration.

It is our request that the Candidates for the F. A. and B. A. Examinations should be compelled to take up a classical language as their optional language. The consequence of such a rule will be that almost all the native students who form a considerable majority of the candidates appearing for these examinations will take up Sanskrit, the ancient classic of India. This is the effect we desire to bring about on the following grounds:—

I. A thorough knowledge of Sanskrit literature and philosophy is indispensable for understanding properly the rationale of the social and religious institutions existing in India and for basing future reform on old foundations, utilising as much as possible the materials lying imbedded therein. "To understand the past and present state of Indian Society," writes Monier Williams, "to unravel the complex texture of the Hindu mind, to explain inconsistencies otherwise inexplicable, we must trust to Sanskrit literature alone. Sanskrit is the only language of poetry, drama, law, philosophy, the only key to an apparently vast confused religious system, and a sure medium of approach to the hearts of the Hindus, however unlearned or however disinclined. It is in truth even more to India than classical and patristic literature was to Europe at the time of the reformation." While such is the position of Sanskrit, the importance of its study in the case of native youths receiving English education can hardly be exaggerated. To sift minutely the mass of ancient learning transmitted to them, to examine what western institutions are likely to take root and prosper in India and to see what modifications are necessary, to make them harmonize with the civilization already existing, to do these is a task for which, our youths will be but ill-prepared without cultivating the Sanskrit language. Moreover, a good knowledge of Sanskrit will tend to make the western ideas diffused through its medium, more acceptable to the general mass of the Hindu population.

II. We are of opinion that the spread of Sanskrit learning will greatly contribute to the improvement of the Vernaculars. The past history of the Vernaculars shows under what obligations they are to the Sanskrit language. The number of Sanskrit words adopted by them forms a considerable portion of their vocabulary; their structure and idiom have been modified and improved by the examples furnished by the Sanskrit language; and the matter which their literature contains is but a reproduction from Sanskrit books. The fact that most of the writers in Telugu, Canarese, and Malayalam were great Sanskrit scholars, is one of no small significance in connection with the present subject. It might therefore be inferred, that the same instrument which has been hitherto employed in developing them from rude dialects into what they are, should be employed in extending their vocabulary to meet the requirements of

modern times. Almost all the scientific and technical terms in the modern European languages are compounded of classic roots. Similarly, vernaculars are under the necessity of framing the required scientific and technical terms from primitive Sanskrit roots. If English words are freely imported into the vernaculars, we are afraid that they cannot be easily naturalized. Without the help of Sanskrit roots, the formation of simple and concise words in the vernaculars is impossible; and loose and circuitous definitions must be resorted to in translating English books into those languages. In such translations, native writers will surely find enough of work for a long time to come, and the difficulty which we have pointed out must be removed in the manner and by the means we have suggested. Native youths find it more difficult to understand the Sanskrit words and phrases used in their Vernacular books than the structure and idiom of those languages. So the measure we propose goes far to remove the greatest difficulty which native youths have to contend with in mastering their own literature.

III. There is another important advantage which accrues from the adoption of the rule we propose. In these days of increased intercourse among the different races inhabiting India, many of the natives have to cultivate the acquaintance of some vernacular or vernaculars other than their own; and as all the vernaculars have some points of resemblance to one another in the relation they bear to Sanskrit, we believe that some knowledge of that language will greatly facilitate the acquisition of those vernaculars. It is needless for us to point out that the success that has attended the labours of the comparative philologists in Europe is owing to the impulse given them by the discovery of the Sanskrit tongue towards the close of the last century. Suffice it to say, that the study of that subject is as important here as it is considered to be in Europe.

IV. It is often asserted that there is nothing new to be learnt in Sanskrit and consequently it is unnecessary to introduce it as an element of higher education when every department of English literature and science is taught. This assertion is no doubt true in the case of objective sciences; but we very much doubt if every system of Sanskrit logic has its representative in the west and every shade of philosophical opinion, its likeness. The mass of truth won by the ancient Sanskrit writers might be small; but every direction essayed by their intellectual powers and all their efforts whether fruitful or abortive are good for the natives either as patterns for imitation or warnings for future guidance. Even conceding for the sake of argument that no new ideas are to be obtained from Sanskrit, still the modes of thought and expression which the ancient Sanskrit books contain are of no small importance to educated natives.

V. We shall now anticipate the most important of the objections that might be raised against the proposed measure and try to answer them.

(1). It might be said that there is no necessity for such a compulsory rule; if the importance of the study of Sanskrit is as great as it is represented to be, and if the majority of the native youths recognize it, they can take up that language for the University Examinations under the rules already existing.

In answer to this, we submit that native students generally think that studying their vernaculars is much easier than learning Sanskrit, and as long as they are permitted to take up Vernaculars for the University Examinations, they will do so. Moreover they generally make the selection two or three years before they appear for the Entrance Examination, and at that stage they are unable to have an adequate idea of the importance of Sanskrit. Such a rule has been in force in the Universities of Bombay and Calcutta where there has been undoubtedly a greater liking for the Sanskrit tongue.

(2). It might be said that all the advantages enumerated can certainly be obtained by having a few good Sanskrit scholars, and therefore it is not necessary that every candidate for the higher University Examinations should be made to read Sanskrit. It might be urged that every graduate and under-graduate would not turn out a reformer and that the required expansion of the Vernacular Vocabulary might safely be entrusted to the hands of a Committee of Sanskrit Pundits; it might also be pointed out that under the existing system there is scope for some to turn out good Sanskrit Pundits and for others to turn out good Vernacular scholars, and that the two classes could help each other. This reasoning is unsound if examined in connection with the circumstances of the case. It is true that every graduate and under-graduate will not turn out a reformer; but it is highly desirable that they should know something about their social and religious institutions. A healthy social development is only possible when the general mass of Hindus clearly perceive the peculiarities of their social position. If a few candidates study the Sanskrit language, it is highly improbable that those few will have all the qualifications necessary for pointing out the true way to social reformation. But if every one of the candidates is made to read Sanskrit, it is probable that a few of them may, in course of time, arise with the requisite qualifications for the task. We believe that if a large number of new words were manufactured within a short time by a select band of Pundits, the effect would be highly injurious to the vernaculars. New words must be introduced slowly and imperceptibly and rendered familiar to the people by frequent usage.

(3). There are some people who think that the measure proposed is highly detrimental to the interests of the vernaculars. At the present time, the objectors would say when so many students study the vernaculars for the higher examinations, there is no appreciable advance towards their improvement, and if the vernaculars are replaced by Sanskrit, all further progress in them is hopeless. The candidates for the Matriculation Examination will also take up Sanskrit and the practical effect of the rule will be to remove the vernaculars from all University Examinations. Vernacular publications will soon cease to exist for want of a reading public, and it will be hopeless to expect these graduates and under-graduates to diffuse knowledge among the ignorant masses by means of Vernacular books.

That this apprehension is baseless will appear when the matter is subjected to a critical examination. The proposed rule has been in force for a long time in the Universities of Bombay and Calcutta and instead of barring the improvement of the vernaculars, it has given a greater impetus to their progress. Bengalee and Maharat-

the publications such as periodicals, translations and original books, have been increasing with astonishing rapidity and we do not see any reason why the same rule should produce in this Presidency all the injurious consequences predicted. It might be urged in reply that the languages of those Presidencies have a closer connection with Sanskrit and that the people of this Presidency are not likely to show as much spontaneous enthusiasm for their own vernaculars as the Bengalees and Maharattees do. But we think that the connection between Sanskrit and our vernaculars is close enough to warrant the conclusion that the cultivation of the former will in course of time be conducive to the improvement of the latter. Moreover the indifference of the students here towards their vernaculars is not natural to them but is the product of the following circumstances:—

1. The insipidity of the present vernacular literature.
2. The absence of a large reading public.
3. Great enthusiasm for English education.
4. The comparative poverty of the people.

And these causes, there is reason to believe, will be removed in course of time. If a large number of interesting and instructive books, comprising every important branch of science be written in the vernaculars, a large number of readers will soon be found, for in that case there will be less necessity to resort to English books; and we have already pointed out how the cultivation of Sanskrit would enable the educated natives to translate English books into the vernaculars. We are also of opinion that the unbounded enthusiasm now shown by native youths for English education will soon find a limit when they are able to see that Government service is not the only means of gaining a livelihood.

It is highly desirable that every native student should have some knowledge of Sanskrit in addition to a command over his own vernacular; but the practicability of a trilingual education in our Colleges and schools cannot be reasonably inculcated. Therefore the University must make a selection between Sanskrit and the vernaculars. The former is almost a new language to the students, while they are familiar with the latter from their infancy. Secondly, Sanskrit is a far more difficult language to be learnt than any of the vernaculars, and lastly, while a knowledge of Sanskrit facilitates the study of the vernaculars, an acquaintance with the latter does in no way lessen the labour required to learn the former. From these considerations it might justly be asserted that it is more probable that a student who has studied Sanskrit in the College will learn his vernacular after leaving it, than that he will learn Sanskrit having studied his own vernacular in the College. Hence, we are of opinion that the vernaculars can safely be left to be mastered by the unaided exertions of the students. The course of classical education adopted by some Colleges and Schools in England gives some support to the view we express.

It is true to some extent that the adoption of the rule proposed will force the candidates even for the Matriculation Examination to take up as their optional language Sanskrit. But it must be remembered that many of the candidates who succeed in that examination do not continue their studies up to the F.A. Examination, and the number of such boys is likely to increase in future. Moreover, the

University authorities may, if they think it desirable, make it a rule that no classic will be allowed for the Matriculation Examination, considering that even Europeans and Eurasians who appear for that examination here should have some knowledge of the vernaculars.

(VI.) The measure we propose does in no way affect the European and Eurasian candidates for the F.A. and B.A. Examinations, as almost all of them generally study Latin or Greek for these examinations. The exclusion of Hindustani will not be productive of any serious difficulty in the case of Mahomedan students as they can conveniently take up either Arabic or Persian.

(VII.) The undersigned further beg to add that as the University rules make it possible for a candidate to pass the F.A. or B.A. Examination, if he only gets a third of the number of marks assigned to English and a third of the total number of marks, and consequently as there is a probability of candidates who have totally neglected their optional language, succeeding in these examinations, the securing of a fixed minimum in it should be made a condition of passing as it is the case with English.

(VIII.) In support of the views set forth above, a copy of the letter of His Highness the First Prince of Travancore addressed to the Secretary to the Triplicane Literary Society is appended.

One Hundred and Ninety-one signatures, were attached to the original of the above letter, fifty-four of which are those of Graduates.

#### TO THE FELLOWS OF THE UNIVERSITY OF MADRAS.

SIRS.—In reply to a letter forwarded to you criticising our original letter on the subject of a classical language being made compulsory for the F. A. and B. A. Examinations, we have the honour to make the following statements.

I. In the fifth paragraph of the counter letter it is said that "The proposers of the rule aforesaid are in raptures over imagined blessings of Sanskrit Education, and have naturally indulged in speculations which we resolve to leave alone." What these "imagined blessings and speculations" are they don't assert, but we infer that such of our statements as they have left alone, must be regarded by them as speculation. In the 1st paragraph of our original letter we state that a knowledge of Sanskrit is necessary for social reforms and for a thorough understanding of our social religious institutions and in support of our statement, we quote a passage from Monier Williams' Indian Wisdom which runs as follows, "To understand the past and present state of Indian Society, to unravel the complex texture of Hindu mind, to explain inconsistencies, otherwise inexplicable, we must trust to Sanskrit literature alone. Sanskrit is the only language of poetry, philosophy and law, and the only key to an apparently vast confused system. It is even more to India than what classical and patristic literature was to Europe at the time of the Reformation." Perhaps we blindly admiring Sanskrit may be speculating. Is Monier Williams also wildly speculating?

II. In the same paragraph our opponents say, "we shall simply notice and reply to some practical points raised by them." And as such, they notice and reply to the following.

1. "They (we) say, that a knowledge of Sanskrit, will make Western Ideas diffused through their medium more acceptable to

the general mass of the Hindu population." Referring the word *their* by a mistake to a *Knowledge of Sanskrit* they characterize the above statement as one against "reason and human experience." But what we say is that Western Ideas would be more acceptable to the general mass, if diffused, not through the medium of Sanskrit (as they misunderstand us) but through the medium of those youths who happen to be acquainted with Sanskrit in addition to English, for the opinions of such youths will be more weighty as being based on their sacred literature. We leave you to infer whether this is against reason and human experience.

2. The objectors admit that "the Vernacular may possible improve by indenting upon Sanskrit vocabulary as it is the case with various languages, but we fail to see how the present condition of Vernaculars in the country will be improved by the spread of Sanskrit learning." Now the condition of the vernaculars can have reference either to the state of their literature or the apathy with which they are studied. As to the state of literature it is admitted that the spread of Sanskrit learning may improve the vocabulary of the vernaculars—Is not then, we ask, the improvement in the vocabulary a considerable improvement in the literature itself? Does not the condition of the vocabulary enter into the condition of the literature? In fact, we fail to see any worse defect in a language as the medium of mental intercourse than the absence of a good vocabulary. We think that the circumstance that most requires improvement in the condition of the vernaculars, is the absence of such a vocabulary, and if this defect can be improved by the spread of Sanskrit learning what more do we want? Further we would request those who deny the truth of our proposition to refer to the times of Elizabeth, James I., and Charles I. of England. Did not then the study of the European classics enrich the then vernaculars with a great variety of words? Did it not give activity and strength to the national intellect and create new models of style and thought? Is it wild speculation (!) to expect that our Indian classic will do to the Hindus what the European classics did to the European, at the time of the Reformation, when it is admitted that the connexion between the Indian classics and the Indian vernaculars is much closer than the connexion between the European classics and European vernaculars? As for the apathy with which the vernaculars are studied, we confidently assert that the apathy is not so much owing to any want of encouragement given to them in schools, as to the circumstances mentioned in our original letter, viz., the insipidity of the present vernacular literature, the absence of a large reading public the enthusiasm, shewn for the English Education, and the comparative poverty of the people. Unless these causes are removed, any amount of time devoted to the study of the vernaculars in school, must be we believe, useless towards creating a taste in the students for the same.

Besides, the circumstance that most of the poets in the Dravidian languages, were either Sanskrit scholars themselves or acquainted with Sanskrit works must be abundantly clear to any who can pretend to an insight into the Hindu vernacular literature. Are our opponents prepared to deny that almost all the Telugu poets were Sanskrit scholars? Even in Tamil the best poet, Kumbun,

acknowledges that he is a feeble mouth piece of Valmiki the great Sanskrit Epic poet. Even the vaunted Kural consists of ideas which would never strike any who is unacquainted with Sanskrit literature. The modern Telugu pundits are most of them Sanskrit scholars, and the modern prose writers in Tamil are more or less acquainted with Sanskrit. Ignoring as they do these salient facts, they claim the monopoly of accuracy for themselves, and declaim that our statements are so many sophisms startling and unintelligible.

3. "It is suggested," say the advocates of the vernaculars "that scientific and technical education cannot be imparted without the aid of Sanskrit inasmuch as scientific and technical terms have to be coined in Sanskrit." This is not absolutely true, say they. May we ask them why? In the next sentence admitting the truth of it they observe, "nor does the coining of words which all cannot do with equal wisdom, need to occupy the attention of the vast majority of undergraduates." To this we reply that on the very ground of all not being able to coin words with equal wisdom, we want to educate more persons in Sanskrit than can actually be expected to coin words with wisdom. Pity it is that the University authorities do not possess that prophetic soul by which they can detect Philologists in their infancy, and foster them only under their care and thus spare the confusion, time and money of indiscriminate patronage! Moreover, if we recognize this only advantage in the spread of Sanskrit learning, the remark of our opponents will be excusable.—But we have enumerated several others besides this one of furnishing materials for coining scientific and technical words so that we anticipate that the imparting of Sanskrit knowledge will not result solely in the coining of words but in the realization of several other advantages.

4. It is asserted (by the advocates of Sanskrit) that intercourse between the various races of the country will be facilitated by the cultivation of Sanskrit from which their languages have borrowed.—This the advocates on the other side characterize as a "startling proposition" inasmuch as "no Tamil or Telugu speaking native has yet found in his experience that it is easier for his class to learn Canarese or Mahratta through the medium of Sanskrit than directly." If we had said, that the vernaculars other than one's own can be acquired more easily through the medium of Sanskrit than directly, our proposition would have merited the remark. But we simply say that a previous knowledge of Sanskrit will render easier the acquisition of such a language as Mahratta, which is its more dialect. Will it be denied that the previous acquaintance of an Englishman with Latin will help him considerably in acquiring French?

"It is thrown out with confidence," say our vernacular advocates "that Sanskrit study until graduation, will prepare students for a subsequent easy self-education and self-instruction in the vernaculars," and remark this is hardly logical. If we had said that vernaculars might be begun after studying Sanskrit in the college, it would have indeed been preposterous, but what we say is, that the vernaculars should be retained till the Matriculation Examination, and that they should be replaced by Sanskrit only for the higher Examinations. We suggest in our original letter

that if the senate think it fit, they can allow no classic for the Matriculation Examination, seeing that even the Eurasians and Europeans who appear for the Examinations here, ought to know something of the vernaculars of this country (*vide* para. 5). It cannot indeed be said that the time spent in school for the study of the vernaculars is so little that it amounts to nothing. It will be granted we believe, that the vernacular attainments of a graduate are not for all practical purposes more respectable than those of a Matriculate. So that the four years of study devoted in the collegiate Department are simply time wasted.—We say let this time be occupied by reading some language new—Sanskrit, the advantages of which as we have shown in our original letter, are multifarious.—The miserable nature of the knowledge possessed by our students in their vernaculars, is not owing so much to the shortness of time, as to the defective system of teaching them. Let the students be made to read more prose, have more exercise in composition, read other lessons such as history in vernaculars, let the University Examination be conducted in a manner similar to that in which it is conducted in English, we dare say that our undergraduates will not produce such bad idioms and ungrammatical expressions as to afford good treats to our Examiners.

III. In the sixth paragraph our opponents assert that "if the general well being and advancement of the Native Community be at all an object, they (members of the senate) cannot too scrupulously regard or too anxiously maintain the vernaculars in the University Examinations" This is at best vague. In what do the general well being and advancement of the native community consist? Do they not consist in the moral, intellectual and material progress of the people? English Education apart, which of the two, vernacular or Sanskrit is likely to help in improving the moral and intellectual condition of the people? Vernaculars are only useful so far as they are the medium of social intercourse. They cannot boast of any literature, conducive to any moral or intellectual improvement. If the past history of India is to have any share in moulding the social aspect of the modern Hindus, we must resort to the Sanskrit literature, the repository of our past moral and intellectual glory. As for the medium of communication we repeat, the vernaculars studied and improved till the Matriculation Examination more than suffice us. As a source of historic information they are of least value. They cannot boast of any works describing the Hindu laws, ethics, and philosophy or even puranas and sastras. These last are very rich in historic materials. Moreover even if the vernaculars can be resorted to for historic purposes, they will not give us any idea of the history of Hindus as a whole, and of the history of the Hindus prior to the time when the vernacular literature came into existence.

IV. It is said that "The ulterior aim of education is taken to be, that the educated natives should prove the interpreters of the western thought to their ignorant fellow countrymen, and their instructors in practical and useful departments of Western knowledge." This is only partially true. The educated natives are not only intended to interpret western thought to their ignorant countrymen but they are also expected to understand their own society first and adapt western ideas to the circumstances of their society: nothing can be a greater folly than to import western ideas in their purity and

engraft them on the oriental mind. If so, how can we utilise our western ideas if we do not understand the rationale of our social and religious institutions? To this we must trust to Sanskrit literature alone. Educated men are not only to interpret western ideas to their fellow countrymen but are also to lead them on. But how can they do this if they do not understand the nature of the circumstances under which those who are to be led, are placed? As for the intended instructors lacking the command of the medium of communication, we have already remarked that the six or seven years' time, properly devoted to studying a mother tongue which contains nothing to exercise our thinking faculties is quite sufficient for the purpose.

The eighth paragraph alludes to the "notorious fact that the native students find as much difficulty in gaining anything like a mastery of their vernaculars as of English and to the disgraceful specimens of their vernacular idiom and composition." Did it ever strike our opponents that the only difficulty felt in understanding vernacular works is, in most cases the difficulty of understanding the Sanskrit element in them? As for the disgraceful specimens &c., we have already said that they are more owing to the defective system of teaching the vernaculars and to the apathy of the students the causes of which we have stated elsewhere, than to any peculiar difficulty in the structure and idiom of the language or any incapacity on the part of the students.

V. "Indeed it is our humble opinion, which we state subject to correction, that no system of education can be called reasonable or productive of good in any country if instruction in foreign languages is not given with the aid of its vernaculars." This is indeed true so far as the lower departments of school are concerned; but quite inapplicable to collegiate education. Neither is the collegiate education now given with the aid of vernaculars. So that the proposal we make affects in no way the existing order of things. The whole drift of our original letter has been misunderstood by the so called advocates of the vernaculars. We never said that the vernaculars should be replaced by Sanskrit in any other classes than those of the F. A. and the B. A. Examinations.

In the eleventh paragraph our opponents express an apprehension that the proposal will tend to leave "the graduates of the University among the ignorant masses with English a foreign language supplemented by Sanskrit, a dead and no less foreign language for their aid." This we undertake to assure them is a groundless apprehension arising from having misunderstood us. We never said that Sanskrit should replace vernaculars from the very commencement of a child's education, but only after he matriculates, and if the Senate adopt our suggestion of allowing no classics for the Matriculation Examination much less will their apprehension be founded on reason. They also complain of the imperfect stock of knowledge in Sanskrit which will be acquired by our students and also of the impracticability of teaching its richer beauties of literature and the higher flights of philosophy. To this our reply is that the University education is not intended to be and cannot be perfect, and that all it can do is to put the students in the way, and that if the students want to reach the richer beauties of Sanskrit literature and higher flights of philosophy, they must shift for themselves, and that the University

education is quite sufficient to create a taste in the students for Sanskrit.

VI. In the twelfth they undertake to defend the literature and grammar of the Vernaculars. Indeed they have felt it incumbent to defend the literature of the Vernaculars; but who ever assailed their grammar for them to feel it incumbent to defend it also? What do they say by way of defending the Vernacular literature? They say a vast majority of Sanskrit works find their translations or equivalents in those languages. They would have done better if they had enumerated some of them. Can they point out in the vernacular translations of Sanskrit dramas, descriptive works, law, philosophy Sastras and Puranas? True some Epic poems and one or two puranas have been translated but to say that these constitute a vast majority of Sanskrit works is monstrous.

In the concluding paragraph they allude to the weighty words of wisdom and truth pronounced by some infallible sage some three years ago. They are afraid that the proposed scheme would prove a national calamity (!!). It is more easily said than proved. Indeed has it proved a national calamity in Bombay and Calcutta? On the other hand has not such a rule proved a national blessing? Are the circumstances of Bombay and Madras the different parts of the same country, so dissimilar as to cause any one to fear that what has proved a national blessing in one place, will prove a national calamity in the other? In conclusion we would draw the attention of the members of the Senate to the encouragement given to Sanskrit by such Universities as the University of St. Petersburg where a Bengal gentleman has been appointed as the professor of Bengalee and Sanskrit. While such is the ardour and interest with which this literature—researches into which have almost given a fresh color to the ancient history of the world—is encouraged by foreigners, it is very humiliating to reflect that at least a portion of its mother country, should raise hue and cry at an attempt to give life to her dying daughters.

#### EXAMINATIONS.\*

(Second Notice).

(Continued from page 58).

We may continue our notice of Mr. Latham's book on the *Action of Examinations* by quoting the following important caution. He is speaking of the relation of the teacher to the pupil when preparation for examination is their bond:—"Unless the teacher be preserved by high personal qualities, there is a danger of his coming to be regarded as a skilled confederate in a game." It may even be feared that some teachers do come so to regard themselves. The moral result of education under such conditions need not be discussed.

The Examiner does not test qualities of mind directly, he only infers them from the answers to questions: for these answers he gives "marks," and by these marks the result is determined. No doubt in looking over papers a practised Examiner does see a good way into the character of a man's mind, he gets an impression over and above his marks, but of his marking he must, in the case of many

\* On the Action of Examinations. See H. LATHAM, M.A.

government appointments, he prepared to give an account; he is told to note every word or figure that is wrong, and an impression is not a thing easy to justify, so he assigns his marks strictly according to the correctness of each answer as it stands. He may have some notion that one man has got his knowledge in a way that will do him good, and another in a way that will not, but this must not affect his appraisal.

We here come to one of the great difficulties of the examination system. A teacher is educating a pupil by means of Geometry or by means of the analysis of sentences in a foreign tongue, but the education given is not proportional to the Geometry or the linguistic knowledge acquired in the process. Two boys of equal ability may be taken in hand by different teachers, and at the end of a certain time one will be able to write out fifty propositions while another can only write out twenty, but the latter may have got much the most education of the two; for every proposition may have been made the basis of a discussion which has forced him to use not only his memory but his mind. Again, one may have learned five books of an author with a translation, and knows no more of the language than when he began; and another has long one book without such help, and has learned how to unravel a passage by himself. Speaking more generally, one man has learned to apply his mind and to work with method, while another can only learn bits given him by a tutor, and yet the score of the two may be the same. The result is that a student may be trained to get marks, without possessing the qualities which the marks are supposed to indicate. The weight of so many yards of cotton cloth was supposed to be proportioned to its substance, but a way has been discovered of communicating weight by the sizing. Something of this kind we may fear takes place now and then in getting up an article for the examination market, and the demoralization thus produced is the more grievous because the article in question happens to be a young human being.

We used to hear it said, "How does it matter in what way the knowledge has been got so that it is there?" Now we know better. It does make all the difference *how* a man has learned and still more *how* a boy has learned; he may get the use of his brains in learning, or he may have got the results of some kind of learning by some process which wants no use of brains. He may have got a smattering of a modern language by some of the processes which are advertised as ensuring a power of talking French in three months to "persons of the lowest capacity." Besides there is knowledge and knowledge; there is that which has soaked in and saturated the system and that which has been poured in quickly and runs out as fast. I set very little value on the verdict of a single Examination in given subjects. I should think far more of the fact that a youth had gone credibly through a school with an able master, and had been a year in the 6th form, than that he should have obtained a pocket full of certificates for Examinations in specific subjects away from his school. The value of Examinations, excepting those of the highest kind, is far greater as an engine in the hands of the teacher to keep the pupil to definite work than as a criterion. What they chiefly show is a power of carrying matter in the memory; and as this power cannot have been obtained without work, we may infer, indeed that the pupil has some steadiness of purpose—but the value of this work

again depends on circumstances, for it may have been done under pressure, when the boy was under the master's eye, and could not escape; or on the other hand it may have been done when the youth was in the midst of temptations to amuse himself and when he steadily exercised a mastery over himself. The distinction in moral value between works done freely and works enforced by close supervision is one that must be kept well in view. The superior value of work done at the University over that done at school as a guarantee of moral power rests very much on this distinction, and many of the disappointments arising from the failure at college of boys who have got scholarships from school arise from the want of this moral power.

The following is well worthy of consideration:—"The fact that the German system has been on the whole successful while that of France has proved a failure, illustrates the working of a very important principle: In Prussia, the Examination is subordinate to the teaching, while in France the teaching is subordinate to the Examination. The Examinations in a German Gymnasium are conducted by the teachers themselves, though in the presence and under the control of a government official. Thus the independence of the teacher, his self-respect, and sense of responsibility, are maintained, while sufficient external supervision is introduced to prevent laxity or collusion. In France, on the other hand, a minute programme is put forth by the government, and the business of a Professor at the Lyceum is simply to prepare pupils to pass in an Examination in the subjects thus definitely marked out. In the conduct of this Examination the Professors have no part, neither can they readily make themselves heard, if they desire any modification of the prescribed course. "We are not the educating body," say the Professors, "the state constructs the machine of education, and it only gives us a handle to turn." In all systematic education there must be indeed a mechanical organization, but the vital element is free human action,—the main good which the pupil gets is from contact with a superior mind. If the teacher can give no play to the bent of his own intellect, if he have only to drill the pupil in a prescribed course, if his own thoughts or views can find no place in the Examination, he will not care to occupy his pupil with them, and the pupil will not attend to them if he does; so after a time the teacher will keep his thoughts to himself, or possibly he may cease to think; at any rate the pupil will only come into contact with the husk of the man, and not with the real human being himself.

It is one of the drawbacks to the use of Examinations in general that they tend to crush spontaneity both in the pupil and the teacher; and this tendency is far greater when the Examination is supreme and external to the teaching, than when the teaching and examining bodies are one, or when in some way each can influence the other.

The French have exaggerated and perfectionated the mechanical element in education; the Minister of Public Instruction can boast that he can tell at any moment what lesson every boy in France is learning, but in so doing they have destroyed the human element, and they are beginning to find that it is only men that can make men, and that a system of machinery worked by wires from a centre, however ingeniously it may be constructed, turns out but poor imitations of humanity. How fully the Athenians grasped the truth on which I have just dwelt, is seen from their word for attendance



on a great man's teaching, it is *ουροσφα*—it was the improvement to be got from *his company* which was the first thing they thought of."

There are, we imagine, few among our readers but will see the applicability of much of the above to our Indian system of education. How weighty again is the following:—"If we damage the general standard of truthfulness by leading young men to glory in having outwitted Examiners and seemed to be what they are not, by the dexterous use of a scrap of information, then we lose far more morally than we gain in any other way."

Speaking of questions which call on very young men for the comparison of philosophical views, or for the judgment of ripe manhood—questions which belong rather to the examiner's own time of life than that of the candidates—Mr. Latham writes:—"The Bishop of Salisbury remarks wisely, in his evidence to the Oxford Commission, on the mischief which may arise from dealing with youth as if they had passed through years of thought. One man in a hundred may be set thinking, the rest urge their tutors to give them *their* thoughts ready for production. This process is quite as injurious to the tutor himself as it is to the pupil, and the effect on the tutor should be at least equally considered. It is a sad thing to give able young teachers low views of learning; and one who has long done the work of "cranning" comes to have no more belief in the education got from books, especially with a view to examinations, than the old statesman had in the truth of history."

One of the difficulties inseparable from examinations is well pointed out. "There are fatal objections to the introductions of "set subjects" into those competitive examinations which are intended "to give no advantage to particular places of teaching. It would interfere with school work if particular subjects were prescribed. It is the great difficulty of the Indian Civil Service Examination, which is meant to afford quite an open field, that the English History and Literature and the rudiments of certain sciences act in the same way as set subjects: they represent acquaintance with manuals. The consequence is, that a particular kind of teaching is rendered advantageous: success depends much on the judicious selection of the subjects, and the teacher, rather than the pupil, is in fact the person under examination."

The force of this has been allowed in the most practical manner by the modifications just introduced in the marking for this examination, and it may not be uninteresting if we here introduce for reference the old and new schemes of the Indian Civil Service Examination, which are as follows:—

| SUBJECTS.           | MARKS. |      |
|---------------------|--------|------|
|                     | Old.   | New. |
| English Composition | 500    | 300  |
| English History     | 500    | 300  |
| English Literature  | 500    | 300  |

| SUBJECTS.                                | MARKS. |                                        |
|------------------------------------------|--------|----------------------------------------|
|                                          | Old.   | New.                                   |
| Greek*                                   | 750    | 600                                    |
| Latin*                                   | 750    | 800                                    |
| French*                                  | 375    | 500                                    |
| German*                                  | 375    | 500                                    |
| Italian*                                 | 375    | 400                                    |
| Mathematics                              | 1,350  | 1,000                                  |
| Four sub-<br>divisions.) Natural Science | 1,000  | 600 { (or 800 if Chemistry<br>is one). |
| Logic, Mental and<br>Moral Philosophy    | 500    | 300 (Logic only).                      |
| Political Economy                        | 500    | 300 (new subject).                     |
| Sanskrit                                 | 500    | 500                                    |
| Arabic                                   | 500    | 500                                    |
|                                          | 7,875  | 6,900 (or 7,100).                      |

It would be beyond our present purpose to go into this scheme, but we give it as of value. In our next issue we shall complete our notice of Mr. Latham's Book.

#### CURRENT MISTAKES IN TEACHING ENGLISH GRAMMAR.

THE subject of the following remarks has, unfortunately, no pretensions to the charm of novelty. Most of you have probably been hammering away at English Grammar for years, and some perhaps will have to do so for several years to come. My humble endeavour will be to help such to make their strokes as telling as possible, by showing them where and how effort is commonly wasted. For several years past I have had a good deal to do with the examination of pupils in schools, and candidates who have not long left school, more particularly in the department of English Grammar, in which subject many thousands of sets of answers have, from first to last, come under my scrutiny; and, considering how important a part examinations play in our modern system, (whether they are to be looked upon as a great good, or as a necessary evil,) I thought that it would not be uninteresting to those who, to a greater or less extent, are engaged in preparing pupils for the ordeal, if I gave them some of the results of my experience, by setting before them the kind of mistakes which candidates most commonly make, and the way in which they come to make them. In doing this, I shall not be able to avoid criticising a good deal that is very commonly taught, and showing that the unfortunate blunders have not merely gone astray, but have been led astray by what they have been made to learn. I need hardly say that the teaching of English Grammar is something widely different from the teaching of, say, Latin or French

\* So in the new scheme: in the old it was,—"The Language, Literature and History of Greece." &c. The reason and intention of the change will be apparent from the following para. of the Civil Service Commissioner's letter, dated 6th June 1877, which accompanied their drafts of the revised scheme.

"As regards foreign language, ancient and modern, the only change of any moment which appears to be required is that the examination in each case should be confined to the language itself, excluding the literature and history, except so far as an acquaintance with them may be necessary for an intelligent study of the language."

† A paper read before the College of Preceptors by C. P. Mason, Esq.

grammar,—at least, to English boys. In Latin, and even in French, (as far as the verbs are concerned,) you have to get your pupils to commit to memory a great apparatus of inflections, rules for forming genders, rules for various concords, rules for the cases to be put after prepositions, &c. All this is material of a very concrete character, and, though troublesome to master, does not, in the first instance call for much beyond observation, comparison, and memory. English Grammar is quite different. We have hardly any inflections; a mistake about the agreement of an adjective with a noun is impossible, as adjectives do not mark gender, number, or case; and, as regards such inflections and concords as we have, the learners know them already. You never really have to teach a boy or girl to form the plural of *brother* or *man*, or the past tense of *be* or *go*. In teaching English Grammar you introduce your pupils at once to the most abstract conceptions, the functions of words, the nature of the parts of speech, the import of inflections, the relations of words to one another, and so on. You begin at once a logical training of the most refined character, the main object of which is, or should be, to discipline the faculties in habits of clear and close thinking, and the perception of the relations of ideas one to the other; and so, through the medium of English Grammar, you put, if I may so say, a grammatical soul into that bodily organism of forms and inflections to which you mainly direct your attention in the grammars of other languages. English Grammar is from the first a system of logical analysis and definition.

Now I am sure I should be wasting time if I set myself to prove at length that, if work of this kind is not done well, it had better not be attempted at all. It is not merely useless if done ill; it is positively injurious. Nothing but harm can come of slovenly analysis and inexact definitions. The mind gets inured to habits of loose and inaccurate thought, which, when once acquired, are most difficult to eradicate. Even young children may be led to grasp the elementary ideas involved in grammar with perfect precision, provided those ideas are presented gradually, simply, and exactly; and I protest most earnestly against the notion that it is fussy and pedantic to strive after this scrupulous accuracy and that rough-and-ready definitions do well enough to begin with, and will be gradually shaped into what is more accurate as the pupil gets on. You would not expect that to be the result of giving loose and inaccurate rules in arithmetic, or of allowing a beginner in geometry to prove his propositions by means of a pair of compasses. And I assert, as a matter of fact, that the result of letting pupils learn loose and inaccurate definitions betrays itself at every large examination by a plentiful crop of answers from candidates who have been at English Grammar for five, six, or even seven years, which exhibit not merely object and contemptible ignorance, but (so to speak) a sort of general *slowness* of mind, and an utter incapacity for writing English in an intelligible, coherent, and grammatical form.\* On

the other hand, I have invariably found that clear and exact answers about grammatical definitions go along with clear and grammatical English composition.

My special purpose at present, however, is to point out some of the commonest errors which vitiate much of the grammar teaching that goes on in our schools, and appear in such ludicrous forms at every examination. I hope none of you will think that I am "poking fun" at you when I say that the greater part of these mistakes would have been obviated, if the writers of the grammars which are most widely used had been able to grasp the not very recondite truth, that words are not identical with what they stand for—that the noun 'book' (for instance) is not the article made up of printed leaves fastened together, which we buy at the bookseller's; and that when we buy one of these articles, we do not purchase a part of speech. Is any one present disposed to dispute this? If so, I hope no feeling of bashfulness will hold him back from having a tussle about it, as soon as I have finished my paper. It would take much too long to chase this really childish blunder out of all the grammatical nooks and corners in which it lurks. I shall content myself with giving you a few typical instances.

Did any of you, when very little boys and girls, ever learn some rhymes about the parts of speech, written with the view of aiding the budding intelligence of infant minds, and some of which run somehow thus—(I am not sure about one line):

"First comes the little particle  
Grammarians call an Article.  
And then the mighty Noun.  
A noun, it may be anything  
A tree, a castle, or a king,  
A person or a town."

Here you see the absurdity above referred to in full force. The ghost of this innocent little effusion still haunts the examination room. I have a dreary presentiment that within the next six months I shall be told hundreds of times, as I have been told during the last, that a common noun is "some thing that belongs to a class," and that "an abstract noun is some thing that you can't see or hear." This last wonderful absurdity has been rather a favourite of late. When it has been given *vice versa*, a little colloquy of the following kind has sometimes ensued between myself and the examinees. "Is goodness an abstract noun?"—"Yes." "Did you hear the word?"—"Yes." "But you told me just now that an abstract noun was something that you couldn't hear." Puzzled silence for a moment or two. Then, from some child a little stronger than the rest, and not impossible a little sharper than the teacher,—"An abstract noun is the name of something that you can't see or hear." "Very well, let us try. Is brightness an abstract noun?"—"Yes." "Can you see the brightness of the sun?"—"Yes." "Then how can brightness be the name of something that you can't see? But now, did you ever hear of a quality?"—"Yes." "Tell me a quality of sugar."—"Sweetness." "What quality makes me call a man good?"—"Goodness." "Very well, sweetness and goodness are abstract nouns. What are they names of?"—"Qualities." "Now name to me some action."—"Jumping, motion, flight." "Those too are abstract nouns. What are they names of?"—"Actions." "Now

\* There is a specimen of what I see a good deal of:—"Adjectives are words with nouns to denote some quality or attribute about which the noun stands for, and clearly shows whether we wish to denote its superiority, or deteriorate it above or below the standard of which we are speaking about." I dare say that ingenious youth had been learning grammar for five or six years. Obviously no clear grammatical idea had ever entered into his mind during the whole time.

tell me a noun that denotes a state in which a person or a thing may be." "*Sleep, life, death.*" "Good, those also are abstract nouns. Now put all that together, and tell me what an abstract noun may be the name of." The answer will come promptly from a dozen at once—"An abstract noun is the name of a quality, or an action, or a state." Is not all this within the comprehension of the youngest child who should be learning grammar at all? If so, is there any excuse for cheating the intelligence of a beginner with the rubbish that I quoted before?

While on this point I cannot refrain from pointing out the worthlessness of a definition of abstract nouns which is more frequently given at examinations than any other; namely, that "an abstract noun is the name of anything which we only conceive of in our minds as having a real independent existence." Now, as *only* is not a negative, this definition involves the assumption that we do conceive of that in which the abstract noun is a name as having a real independent existence. But this is palpably absurd. You cannot conceive of *motion*, for example, as having a real independent existence apart from something that moves. You would contradict yourself in the attempt. That which has an independent existence of its own cannot be an *attribute* of something else. We may fix our attention upon the attribute without thinking about that in which it is inherent. But we cannot *abstract* an attribute in the complete manner in which a thief might abstract my watch. The definition is lame enough as it stands. But confusion gets worse confounded when examinees leave out the word *only*, or, reproducing that irrepressible blunder about words and things, tell us that an abstract noun is "*something that we conceive of as having a real independent existence.*"

Of course this blunder is extended from nouns themselves to their accidents. I suppose most children might be made with a little pains to comprehend that sex (male and female) is a distinction between classes of animals, and that gender (masculine and feminine) is a distinction between classes of words. At present any question on the subject is sure to elicit in abundance such replies as the following, which I quote *verbatim*:—

"Sex is the difference between animals, gender is the difference between things."

"Gender is applied to one individual person, and sex to a collection of persons."

"Sex is applied to living beings, and in a singular sense; gender in a plural sense, and also to inanimate objects."

"Gender is the inflection of a noun as regards things, sex is the inflection of a noun as regards living beings."

"Sex is the distinction between male and female persons, gender between male and female animals."

"Gender is the distinction of sex," or, as I was recently told, there is no difference between sex and gender, they both mean the same. There is a sort of courage about that answer which greatly commends it to my liking.

With how little reflection the usual lists of masculine and feminine nouns are often committed to memory and repeated, you may judge when I tell you that, along with the orthodox *uncle, aunt, bachelor, spinster*, &c., I have had masculine *hill, feminine valley*; masculine *church, feminine chapel*. A view of the relation between Churchmen

and Nonconformists which might suggest some curious reflections, and is at any rate worthy of a boy in a well-known suburban college, who in interpreting a certain passage of poetry, explained "*music that the meeting soul doth pierce*," to mean, "*music suitable for a dissenter.*"

As regards the cases of nouns, I am afraid that many hundreds of unhappy children are still taught that the nominative does something, the possessive owns something, and the objective has something done to it. If, as I fondly hope, I have carried your judgments with me when I insist that when I say, "*Tom kicked Harry*," I do *not* mean that the noun or name, *Tom*, administered the kick, *a priori* you will agree that a mere *form* of a noun, a *case*, cannot do that which the "*mighty noun*" itself is incapable of achieving. Only fancy the *form* of a noun, a possessive *case*, being the owner of a house or a dog. No doubt the inventor of this wonderful specimen of definition plumed himself upon having turned out something remarkably neat and telling. He deserved to be turned into an objective case himself, that he might experience, not in word only, what it was to have "*something done to him.*"

One of the most egregious and exasperating instances of this never-ending confusion between words and what words stand for, is still to be found in one of the most largely used English grammars (I don't wish to mention names, but see p. 31 of the last edition), and in scores of grammars based upon it, especially those little two-penny "*dreadfuls*" which simplify grammar for small children. It comes up in hundreds and hundred of answers in examinations. We are told that "*adjectives express the qualities of nouns, i.e. of names.*" So that "*a tall man*" means that the noun or name "*man*" is tall; "*red rose*" means that the word "*rose*" is *red*. There is no possibility of wriggling out of this conclusion, absurd as it is, if you accept that precious definition. I can fancy the writer saying, "*Oh, you make such a fuss about trifles: of course, I meant that the man was tall, not the noun.*" I could only reply, "*Then, if you meant what is right, why on earth did you say what is wrong?*" And what but harm can come of setting children to learn what is palpably and ridiculously wrong? It is but a variation of the same confusion when we are told that "*an adjective is a word added to a noun in order to mark or distinguish it more accurately.*" Distinguish the *noun*? From what? You can only distinguish a word from a word; from what other word is the noun *rose* distinguished by the adjective *red*? Mark the noun? Pray how? Does it give a peculiar shade of meaning to the noun? What logicians know as the *connotation* of the word *rose* is not affected in the slightest degree; the adjective does not mark the noun, it denotes the *quality* that marks the *thing*. In trying to refine upon a definition which is radically bad, Dr. Abbott, in his "*How to tell the Parts of Speech*," and "*How to Parse*," makes matters still worse.\* He tells us that "*an adjective is a word that can be put before a noun either to distinguish it or to enumerate it, that is, to point out its number or amount.*" What?

\*In this paper I have striven, as much as possible, to avoid mentioning names. If I depart from this rule in the present instance, it is only because this author's great reputation might lead many, who do not care to think for themselves, to attach undue importance to what is doubtless simply the result of inadvertence.

the number or amount of the noun—the name? In *three men* how does *three* enumerate the noun *men* when there is only one noun? "Why, it tells you how many *men* there are, doesn't it?" Certainly, but I was told that it enumerated the noun." "Well it's the same thing."—"Ah, that's where you make the mistake."

Naturally, this confusion between *word* and *thing* appears in force when definitions of the comparative and superlative degrees of adjectives are attempted. Here are some samples of a good deal that I have seen of late:—

"Comparative is one of two things, and superlative is one of three things."

"Superlative degree is the highest an adjective can go."

"Comparative degree is when the adjective is more so, and superlative most."

"The superlative degree expresses the greatest superiority an adjective can have."

"Superlative degree is the adjective extending the noun to the highest degree of comparison above every degree."

Questions about transitive and intransitive verbs always bring out a plentiful crop of mistakes, based upon this all-pervading confusion between words and that which they denote. The unfortunate examinees have been led astray by their grammars. I fancy no one present will dispute the accuracy of what I am going to say. In the sentence, "John struck the horse," we have a word, transitive verb, which denotes an action; we have a word "John," which denotes the doer of the action, and forms the grammatical subject of the verb; and a word "horse," which denotes the object of the action, and forms the grammatical object of the verb; the verb is a word, its subject is a word, and its object is a word. Well then, it must be sheer nonsense to say that the subject of the verb—the word John, mark you—is the doer of the action. It must be nonsense to talk of "the action of the verb." Verbs, words, have no action; they do not walk, or strike, or kick. They denote action, but that is quite another thing—the action is the action of the agent, not of the verb. The blow proceeded from the person John, not from the word "struck." Lastly, the action is directed not to the word *horse*, which is only the grammatical object of the verb, but to the animal denoted by the word *horse*. It is the animal which is the object of the action, not the noun. It is unfortunate that the word *object* is used in this twofold sense—for the *thing* which is the object of the action, and the *word* which is the grammatical object of the verb,—but we cannot now help ourselves. Is it possible to dispute the truth of these statements? But how do our common grammars put the matter? One already quoted says,—"When the subject of the verb is the doer of the action, the verb is active; but when the subject of the verb is the object acted upon, the verb is passive." So that a word, a part of a sentence, can be either the giver of a blow, or the receiver of a blow! Now for the same blunder put the other way. "Verbs which take two objects in the active voice, one of the person and the other of the thing, can be put into the passive voice, with the person as the subject, and the thing as the object." Only think of a *person*—a man or a boy—being part of a sentence, and forming the subject of a verb! Is it not irrational to call this grammar, and

what but muddle and confusion can come of learning such stuff? Do you wish to see how the thing works? Take the following, which I quote, not as exceptional blunders, but as typical specimens of answers that I have had by hundreds within these few months:—

"A verb is in the passive voice when the object of the verb is really the subject, and the subject of the verb is really the object."

"Active voice is the agent passing to the object, passive voice is the object passing to the agent."

"A transitive verb is one that passes over to an object."

"A verb is transitive when the subject passes to the object."

"An active verb which does something; a passive verb is a verb to which something is done."

"A verb is in the passive voice when it acts upon the subject."

"A direct object is that which acts immediately on the object from which the action proceeds."

"All intransitive verbs show that the subject does nothing."

"A verb in the active voice is one in which the subject makes the active verb act upon the object; a verb in the passive voice is one which makes the object act upon the subject."

Let me, in passing, call attention to another exceedingly common mistake. Learners are often incautiously told that a transitive verb must always have an object,—the very important condition of its being in the active voice being lost sight of. Of course, a transitive verb may be in the passive voice, and then there is no grammatical object of the verb, though of course the subject stands for the real object of the action. When I have given a list of verbs to be classed as transitive and intransitive respectively, I have usually found three candidates out of four put all the passives among the intransitives. In the last list that I gave, there happened to be only one transitive verb (*lay*) in the active voice. A candidate pounced upon this, and informed me that *lay* was the only transitive verb in the list, "because you can lay an egg."

I must give you one other illustration of the all-pervading confusion between words and things, which I have been trying to expose. In parsing the words, "full many a flower is born to blush unseen," a candidate recently wrote, "*is* a preposition, showing the relation between *flower* and *born*." Could anything be more preposterously wrong? Hold, however; perhaps he was only making a strictly logical application of the definition that he had learnt. Very likely he had used one of our commonest school grammars which says that "a preposition is a word which shows the relation of a noun or pronoun to some other word in the sentence." Well, does not *is* show (in a sort of way) the relation of *flower* to *born*? Then, according to the definition, it is a preposition. If not, why not? Why, because the ordinary definitions of a preposition are totally wrong. Everybody admits that prepositions show relations of some kind. Of what kind? Here, again, there is absolutely no dispute. Primarily, relations in space, rest in, motion to, motion from—*in, at, to, towards, from, &c.* Secondly, relations of time—*at before, after, &c.* Thirdly, by a metaphorical use, the relations of *cause, effect, &c.* Now I put it to any one of common sense, do these relations subsist between the words of a sentence? If I talk of a bird in a cage, is the word *bird* in the word *cage*? Of course not. The preposition *in* shows the relation

in place of one *thing* to another. Can any one point out any conceivable relation between the word *bird* and the word *cage*, which is expressed by *in*? Yet a grammar, which bears a very distinguished name on the title page, lays down broadly that "a preposition is a word which shows the relation of one noun to another." But these writers cannot even be consistent with themselves. In the same book we read, a few lines further on, that "when a preposition connects noun with noun, the relation is between one object and another." Both statements cannot be correct. Still, when a man has made a blunder, it is better to correct it than to stick to it; and nothing could be more accurate than the statement just quoted; and what the writer goes on to say, "When it (i.e., the preposition) connects a noun with an adjective, the relation is between an object and the quality expressed by the adjective (as *red* with *accepting*); when it connects a noun with a verb, the relation is between an object and an action (as *broken* with *storms*)." But a paragraph like this is a veritable *rara avis* in those sections of English grammars which treat of prepositions. The definition which is given by three examples out of four is the thoroughly erroneous one that I quoted before, namely that "the preposition is a word which shows the relation of a noun or pronoun to some other word in the sentence," to which the writer adds a paragraph, which for confusion of thought is perhaps unrivalled. He says, "Sometimes the preposition shows the relation of one substantive to another, as, 'the wisdom of Solomon is renowned'; sometimes it shows the relation of some person or thing to a given action, as 'he fell against the wall'; sometimes it shows the relation of a substantive to some quality, as 'bread is good for food.' These facts may be thus expressed: 'prepositions relate nouns or pronouns to other nouns or pronouns, to verbs, or to adjectives.'" I presume that "to relate one noun to another" is meant to express the same idea as "to show the relation of the one noun to the other." If not, the second definition contradicts the first. But look, I pray you, at that intervening expository paragraph. It contains three different and absolutely inconsistent accounts of the functions of the preposition. First, the preposition shows the relation of one substantive to another, i.e., of a word to a word. This is the old story—the word *bird* inside the word *cage*. Next, the preposition shows the relation of a person or thing to an action,—no longer of one word to another. Here the writer has accidentally deviated into sense, but it is only for a moment. In the next sentence he goes more ingeniously wrong than ever, for now he mixes the two contradictory notions together, and speaks of the preposition showing the relation of a substantive—not to an adjective, as we might expect, and as he actually says in the sentence that follows,—but to a *quality*. So in *good for food*, 'for' expresses the relation of the word *food* to the *quality* of goodness that exists in the *thing* 'bread.' Is it to be wondered at that learners whose heads have been muddled with this sort of thing, when they come to parse a sentence, make the wildest confusion with their prepositions? You have seen is called a preposition. Repeatedly, I have seen *cannot* called a preposition, *suddenly* a preposition, *full* a preposition, *many* a preposition, *that* a preposition, *as* a preposition, and so forth.

I am greatly mistaken if by this time I have not succeeded in show-

ing that a very large amount of the grammar teaching that is current in our schools is radically vitiated by the neglect of a distinction so simple and obvious, that to mention it is to secure assent for it. The primary definitions, upon which everything in the shape of syntax or the explanation of construction must be based, are in consequence confused, illogical, and misleading,—absolutely worthless for any purpose, whether practical or scientific.

Matters are improving, however. Not so very long ago there was not a single English grammar for schools which did not contain all, or nearly all the mistakes I have just been pointing out, along with a good many more. Now there are several which are nearly or altogether free from them. Even the Potential Mood is dying out, though, like other creatures of low vital power, it takes a good deal of killing. Is it not marvellous that teachers, who, in their Latin classes, never dream of telling their pupils that *possum scribere* is the potential mood of *scribo*; and when they give a German lesson, never insist that *ich kann schreiben* is a potential mood of *schreiben*; or in Greek, that *γράφειν δύναμαι* is a potential mood of *γράφειν*; or in French, that *je puis écrire* is a potential mood of *écrire*—still hanker after that blessed potential mood in England? Be consistent. Have it in all the above languages, or have it in none. Besides, if *I can sing* makes a potential mood, surely *I may sing* makes a permissive mood, *I will sing* makes a volitional mood, *I must sing* makes a necessitarian mood, *I ought to sing* makes a morally obligatory mood. What right has *can* to this pre-eminence of modality? If you take one, you must take all. We used to be told that of a man was a genitive case, to a man a dative case, by a man an ablative case, and so on. Horne Tooke long ago pointed out that, if you went to work in that way, you must have as many cases as there are prepositions. I think it will be hard to show that it is not just the same with the moods.

I now ask your patient attention to a few remarks in which I shall endeavour to remove some very prevalent and mischievous misconceptions as to some other moods:—a task the more necessary and the more difficult, because some very eminent names have lent weight to the views that I have to combat. In doing so, I shall have to appeal to other languages, such as German and Latin. I insist on the right to do so, because, whatever may be the differences in details between, say, Latin and English, there is an identity in the cardinal grammatical ideas on which each language is based. Number, person, case, voice, mood, tense, are based upon the same fundamental conceptions in both languages. If you look at the pronoun, for example, you will see that we have come to assign to one case—the dative—the functions that were originally, even in English, distributed amongst three—the dative, the accusative, and the instrumental. Here is an important piece of difference in detail,—we have not so many cases as the Latins had. For all that, it still remains true that the fundamental functions of case-endings are common to both Latin and English. In like manner, though there are differences of usage, a subjunctive mood is fundamentally the same thing in English, German, and Latin, and no definition of it is valid for English which will not apply to the other languages.

First, let us emancipate ourselves from the tyranny of names. Our common grammatical terms are very insufficient, and often quite

misleading. They have come down to us from times when grammar was most imperfectly understood, through Latin writers, who added blunders of their own to the imperfections that they found. Witness their translating *ardeus yevich* by "*casus genitiuus* (from *genitus*, instead of *genus*). Nothing of value is to be got out of the mere etymological meaning of a grammatical term. "*Accusative*" is a very stupid name for the case of the direct object; and *allative* is still worse for that which denotes an instrument or an attendant circumstance. So you will never get to know what a subjunctive mood is by merely translating the word *subjunctive*. But unfortunately the name has led many to suppose that there is some essential and invariable connection between *subjunctive* and *subjoined*; and, more and worse than this, to confound a *subjoined clause* with a *verb in the subjunctive mood*. You may have a verb in the subjunctive mood in a principal clause, (as in "*If 'twere done when 'tis done, then it were well it were done quickly.*") and you may have an indicative in a subjoined clause, as after *ubi* or *when* or any relative in Latin or English.

Now the first point that I insist upon is this,—that a verb in the subjunctive mood is not simply a verb employed in a subjoined clause, but a particular kind of verbal form, such as *sim, sis, sit*, in Latin; *sey or were, he were*, in German; *I were, he were*, in English; and that the forms *sum, bin, am, est, ist, is*, are indicative wherever they are found. You may find Latin sentences by the score in which *est* follows *si*; but *si est* is not a subjunctive mood; the conjunction is no part of the mood. *Est* is indicative wherever you find it. Yet I have seen a school grammar in which *if I am* is deliberately set down as the subjunctive of *to be*; and mutters are not much mended when such combinations are termed (as by Dr. Abbott) *indicative-subjunctive* forms. A "horse-marine" is nothing in comparison with this wonderful compound, for a marine might bstride a horse; but by no possibility can an indicative ever be any kind of subjunctive. You might as well talk of a genitive-accusative?

I next proceed to consider how far there is any essential connection between the idea of conditionality and the subjunctive mood. Let me ask your attention to the following quotation from Professor Bain. He says,—"*Some circumstances in the manner of an action have also been embodied in the changes made in the root verb. For example, when an action is stated not absolutely, but conditionally, the verb is differently modified, and a series of tenses is formed for present, past, future, complete, and incomplete, of the conditional verb. This is the Subjunctive Mood which exists in full force in the old languages, but is a mere remnant in ours. The machinery is too great for the occasion; we find that conditionality can be given by a conjunction, if or though, and need not be repeated in the verb.*"

If language means anything, this passage means that a special form or mood—the Subjunctive—was invented to express conditionality, that it is the appropriate form for the purpose; and that in the old languages (Latin, for example) it was regularly employed ("exists in full force"), but has been almost entirely dispensed with in our language, because we have found that we can get on without it.

(To be Continued.)

## EDUCATION IN CHINA.

(Concluded from page 189.)

### 5.—Grades of Schools.

THE division of the undergraduate course into the three stages which we have described gives rise to three classes of schools: the primary, in which little is attended to beyond memoriter recitation and imitative chirography; the middle, in which the canonical books are expounded; and the classical, in which composition is the leading exercise. Not unfrequently all three departments are embraced in one and the same school; and still more frequently the single department professed is so neglected as to render it utterly abortive for any useful purpose. This, as we have elsewhere intimated, is particularly the case with what are called public schools. National schools there are none, with the exception of those at the capital for the education of the Bannermen, originally established on a liberal scale, but now so neglected that they can scarcely be reckoned among existing institutions.

A further exception may be made in favour of schools opened in various places by provincial officers for special purposes; but it is still true that China has nothing approaching to a system of common schools designed to diffuse among the masses the blessings of a popular education. Indeed, education is systematically left to private enterprise and public charity; the government contenting itself with gathering the choicest fruits and encouraging production by suitable rewards. A government that does this cannot be accused of neglecting the interests of education, though the beneficial influence of such patronage seldom penetrates to the lower strata of society.

Even higher institutions, those that bear the name of colleges, are for the most part left to shift for themselves on the same principle. Such colleges differ little from schools of the middle and higher class, except in the number of professors and students; the professors, however numerous, teaching nothing but the Chinese language, and the students, however long they may remain in the institution, studying nothing but the Chinese language. Colleges in the modern sense, as institutions in which the several sciences are taught by men who are specially expert, are, as yet, almost unknown. But there is reason to believe that the government will soon perceive the necessity of supplying its people with the means of a higher, broader culture than they can derive from the grammar and rhetoric of their own language.

In establishing and contributing to the support of schools, the gentry are exceedingly liberal; but they are not always careful to see that their schools are conducted in an efficient manner. In China nothing flourishes without the stimulus of private interest. Accordingly, all who can afford to do so endeavour to employ private instructors for their own families; and where a single family is unable to meet the expense, two or three of the same clan or family name are accustomed to club together for that object.

Efforts for the promotion of education are specially encouraged by enlightened magistrates. Recently, over three hundred new schools were reported as opened in one department of the province of Canton as the result of official influence, but not at government expense. The Emperor, too, has a way of bringing his influence to bear on this ob-

ject without drawing a farthing from his exchequer. I shall mention three instances by way of illustration.

Last year, in Shantung, a man of literary standing contributed four acres of ground for the establishment of a village school. The governor recommended him to the notice of the Emperor, and his Majesty conferred on him the titular rank of professor in the *Kiootschik* or Confucian college.

Three or four years ago, in the province of Hupeh, a retired officer of the grade of *Tsintsi*, an intendant of circuit, contributed twenty thousand taels for the equipment of a college at Wuchang. The Viceroy Li-Hing-Chang, reporting to the throne this act of munificence, the Chinese Peabody was rewarded by the privilege of wearing a red button instead of a blue one, and inscribing on his card the title of provincial judge.

The third instance is that of a college in Kwe-Lin-Foo, the capital of Quangsi. Falling into decay and ruin during the long years of the Taiping rebellion, the gentry, on the return of peace, raised contributions, repaired the buildings, and started it again in successful operation.

The governor solicits on behalf of these public spirited citizens some marks of the imperial appreciation; and his Majesty sends them a laudatory inscription written by an elegant penman of the Haulin.

But private effort, however stimulated, is utterly inadequate to the wants of the public. In western countries the enormous exertions of religious societies, prompted as they are by pious zeal enhanced by sectarian rivalry, have always fallen short of the educational necessities of the masses. It is well understood that no system of schools can ever succeed in reaching all classes of the people unless it has its roots in the national revenue.

In China, what with the unavoidable limitation of private effort and the deplorable inefficiency of charity schools, but a small fraction of the youth have the advantages of the most elementary education brought within their reach.

I do not here speak of the almost total absence of schools for girls; for against these the Chinese are principled. The government, having no demand for the services of women in official posts, makes no provision for their education; and popular opinion regards reading and writing as dangerous arts in female hands. If a woman, however, by any chance, emerges from the shaded hemisphere to which social prejudices have consigned her (*tsi qua fola aspectu nudato*) she vindicates for herself a position among the historians, poets, or scholars of the land and never fails to be greeted with even more than her proper share of public admiration. Such instances induce indulgent fathers now and then to cultivate the talents of a clever daughter, and occasionally neighbourhood schools for the benefit of girls are to be met with; but the Chinese people have yet to learn that the best provision they could make for the primary education of their sons would be to educate the mothers, and that the education of the mothers could not fail to improve the intellectual character of their off-spring. But even for the more favoured sex the facilities for obtaining an education are sadly deficient; only a small percentage of the youth attend school, and, owing to the absurd method which we have described, few of them advance far enough to be initiated into the mysteries of ideography.

On this subject a false impression has gone abroad. We hear it asserted that "education is universal in China; even coolies are taught to read and write." In one sense this is true, but not as we understand the terms "reading and writing." In the alphabetical vernaculars of the west, the ability to read and write implies the ability to express one's thoughts by the pen and to grasp the thoughts of others when so expressed. In Chinese, and especially in the classical or book language, it implies nothing of the sort. A shop-keeper may be able to write the numbers and keep accounts without being able to write anything else; and a lad who has attended school for several years will pronounce the characters of an ordinary book with faultless precision, yet not comprehend the meaning of a single sentence. Of those who can read understandingly, (and nothing else ought to be called reading,) the proportion is greater in towns than in rural districts. But striking an average, it does not, according to my observation, exceed one in twenty for the male sex, and one in ten thousand for the female; rather a humiliating exhibit for a country which has maintained for centuries such a magnificent institution as the Haulin Academy.

With all due allowance for the want of statistical accuracy where no statistics are obtainable, compare this with the educational statistics of the United States as given in the last census (that of 1870). Taking the country as a whole, the ratio of illiteracy among persons over ten years of age is 1 in 6; taking the Northern States alone, the ratio is 57 to 1,000, or about 1 in 18.\*

#### 6.--System of Examinations.

To some it may be a matter of surprise that popular education is left to take care of itself in a country where letters are held sacred and their inventor enrolled among the gods; to others it may appear equally strange that mental cultivation is so extensively diffused, considering the cumbrous vehicle employed for the transmission of thought and the enormous difficulty of getting command of it. Both phenomena find their solution in the fact that the Government does not value education for its own sake, but regards it as a means to an end. The great end is the repose of the state; the instruments for securing it are able officers, and education is the means for preparing them for the discharge of their duties. This done, an adequate supply of disciplined agents once secured, the education of the people ceases to be an object. The repose of the state, one of the ancient philosophers tells us, might be assumed by a process the opposite of popular education. "Fill the people bellies and empty their minds; cause that they neither know nor desire anything, and you have the secret of a tranquil government." Such is the advice of Laikheim, which I am inclined to take as an utterance of Socratic irony rather than Machiavelian malice. So far from subscribing to it in its literal import the Chinese government holds its officers responsible for the instruction of its subjects in all matters of duty; and in Chinese society the idea of instruction as the one thing useful has so wrought itself into the forms of speech as to become a wearisome cant. The red card that invites you to an entertainment solicits "instruction." When a friend meets you he apologises for having so long absented himself from your "instructions;" and in familiar conversation

\* Report of the Commissioner of Education, 1871.



simple statements and opinions are often received as "precious instruction" by those who do not by any means accept them. It is more to the point to add that one of the classical books denounces it as the greatest of parental faults to bring up a child without instruction. This relates to the moral rather than to the intellectual side of education. The Chinese government does, nevertheless, encourage purely intellectual culture; and it does so in a most decided and effectual manner, viz.: by testing attainments and rewarding exertion. In the magnificence of the scale on which it does this, it is unapproached by any other nation on the earth.

Lord Mahon, in his History of England, speaking of the patronage extended to learning in the period preceding Walpole, observes that "though the sovereign was never an Augustus, the minister was always a Mæcenas. Newton became master of the mint; Locke was commissioner of appeals; Steele was commissioner of stamps; Stepney, Prior, and Gray were employed in lucrative and important embassies; Addison was secretary of state; Tickell, secretary in Ireland. Several rich sinecures were bestowed on Congreve and Rowe, on Hughs and Ambrose Philipps." And he goes on to show how the illiberality of succeeding reigns was atoned for by popular favour, the diffusion of knowledge enabling the people to become the patron of genius and learning.

The Chinese practise none of these three methods. The emperor, less arbitrary than monarchs of the west, does not feel at liberty to reward an author by official appointments, and his minister has no power to do so. The inefficiency of popular patronage is less to their credit, authors reaping oftentimes much honour and little emolument from their works. But it is something to be able to add that all three are merged in a regulated state patronage, according to which the reward of literary merit is a law of the empire and a right of the people. This brings us to speak of the examination system; not, indeed, a fresh theme, but one which is not yet exhausted. Though not new to the occidental public, these examinations are not properly understood, for the opinion has been gaining ground that their value has been overrated, and that they are to be held responsible for all the shortcomings of Chinese intellectual culture. The truth is just the reverse. Those shortcomings (I have not attempted to disguise them) are referable to other causes, while for something like two thousand years this system of literary competition has operated as a stimulating and conservative agency, to which are due, not only the merits of the national education, such as it is, but its very existence. Nor has its political influence been less deep and beneficial. Essentially political in its aims, it has effected far more in the way of political good than its authors ever ventured to anticipate. By enlarging the liberties of the people it contributes to the strength of the state, and by affording occupation to the restless and aspiring, it tends to secure the tranquillity of the public. The safety-valve of society, it provides a vent for that ambition and energy which would otherwise burst forth in civil strife and bloody revolution.

These examinations are of two kinds, which we shall distinguish as pre-official and post-official; the former is the offspring of the latter, which it has outgrown and overshadowed. Their genesis is not difficult to trace; and, paradoxical as it may appear, these literary examinations date back to a period anterior to the rise of literature. The

principles that lie at their foundation are found clearly expressed among the received maxims of government under the earliest of the historic dynasties. It was not, however, until the dynasties of the Tang and Sung (618-1120) that these examinations assumed substantially the form in which we now find them. Coming down from the past, with the accretions of many centuries, they have expanded into a system whose machinery is as complex as its proportions are enormous. Its ramifications extend to every district of the empire; and it commands the services of district magistrates, prefects, and other civil functionaries up to governors and viceroys. These are all auxiliary to the regular officers of the literary corporation.

In each district there are two resident examiners, with the title of professor, whose duty it is to keep a register of all competing students and to exercise them from time to time in order to stimulate their efforts and keep them in preparation for the higher examinations in which degrees are conferred. In each province there is one chancellor or superintendent of instruction, who holds office for three years, and is required to visit every district and hold the customary examinations within that time, conferring the first degree on a certain percentage of the candidates. There are, moreover, two special examiners, for each province, generally members of the Hanlin, deputed from the capital to conduct the great triennial examination and confer the second degree.

The regular degrees are three:

- 1st. *Siu-tsai* or "Budding talent."
- 2nd. *Ku-jin* or "Deserving of promotion."
- 3rd. *Tsin-shi* or "Fit for office."

To which may be added, as a fourth degree, the Hanlin, or member of the "Forest of Pencils." The first of these is sometimes compared to the degree of B.A.; conferred by colleges and universities; the second to M.A.; and the third to D.C.L. or LL.D. The last is accurately described by membership in the Imperial Academy; always bearing in mind how much a Chinese academy must differ from a similar institution in the west. But so faint is the analogy which the other degrees bear to the literary degrees of western lands that the interchange of terms is sure to lead to misconceptions. Chinese degrees represent talent, not knowledge; they are conferred by the state, without the intervention of school or college; they carry with them the privileges of official rank; and they are bestowed on no more than a very small percentage of those who engage in competition. With us, on the contrary, they give no official standing; they attest, where they mean anything, acquirements rather than ability; and the number of those who are "plucked" is usually small in comparison with those who are allowed to "pass." But, after all, the new-fledged bachelor of an occidental college, his head crowned with the outlines of universal knowledge, answers quite as nearly to the sprightly *siu-tsai*.

Whose soul proud science never taught to stray  
Far as the solar walk or milky way.

as does a western general to the chief of an undisciplined horde of so-called soldiers.

The following report of Panschen, chancellor of the province of Shantung, though somewhat vague, will give us an idea of the



official duties of the chief examiner, and the spirit in which he proposes to discharge them:—

"Your majesty's servant," says the chancellor, "has guarded the seal of office with the utmost vigilance. In every instance where frauds were detected he has handed the offender over to the proper authorities for punishment. In re-examining the successful, whenever their handwriting disagreed with that of their previous performances, he at once expelled them from the hall, without granting a particle of indulgence. He everywhere exhorted the students to aim at the cultivation of a high moral character. In judging of the merit of compositions he followed reason and the established rules. At the close of each examination, he addressed the students face to face, exhorting them not to walk in ways of vanity, nor to concern themselves with things foreign to their vocation, but to uphold the credit of scholarship, and to seek to maintain or retrieve the literary reputation of their several districts. Besides these occupations, your servant, in passing from place to place, observed that the snow has everywhere exercised a reviving influence; the young wheat is beginning to shoot up; the people are perfectly quiet and well disposed; the price of provisions are moderate; and those who suffered from the recent floods are gradually returning to their forsaken homes. For literary culture, Hinchun stands pre-eminent, while Tsaochen is equally so in military matters."

This is the whole report, with the exception of certain stereotyped phrases, employed to open and conclude such documents, and a barren catalogue of places and dates. It contains no statistical facts, no statement of the number of candidates, nor the proportion passed; indeed, no information of any kind, except that conveyed in a chance allusion in the closing sentence.

From this we learn that the chancellor is held responsible for examinations in the military art; and it might be inferred that he reviews the troops and gauges the attainments of the cadets in military history, engineering, tactics, &c.; but nothing of the kind; he sees them draw the bow, hurl the discus, and go through various manoeuvres with spear and shield, which have no longer a place in civilized warfare.

The first degree is only conferred by the provincial chancellor, and the happy recipients, fifteen or twenty in each department, or 1 per cent. of the candidates, are decorated with the insignia of rank and admitted to the ground floor of the nine-storied pagoda. The trial for the second degree is held in the capital of each province, by special commissioners, once in three years. It consists of three sessions of three days each, making nine days of almost continuous exertion—a strain to the mental and physical powers, to which the infirm and aged frequently succumb.

In addition to composition in prose and verse, the candidate is required to show his acquaintance with history, (the history of China) philosophy, criticism, and various branches of archaeology. Again 1 per cent. is decorated; but it is not until the more fortunate among them succeed in passing the metropolitan triennial that the meed of civil office is certainly bestowed. They are not, however, assigned to their respective offices until they have gone through two special examinations within the palace and in the presence of the emperor. On this occasion the highest on the list is honoured with the title of

*chuang yuen* or "laureate," a distinction so great that in the last reign it was not thought unbefitting the daughter of a *chuang yuen* to be raised to the position of consort of the Son of Heaven.

A score of the best are admitted to membership in the Academy, two or three score are attached to it as pupils or probationers, and the rest drafted off to official posts in the capital or in the provinces, the humblest of which is supposed to compensate the occupant for a life of penury and toil.

In conclusion, this noble institution—the civil service competitive system—appears destined to play a conspicuous part in carrying forward an intellectual movement the incipient stages of which are already visible. It has cherished the national education, such as it is; and if it has compelled the mind of China for ages past to grind in the mill of barren imitation, that is not the fault of the system, but its abuse.

When the growing influence of western science animates it with a new spirit, as it must do ere long, we shall see a million or more of patient students applying themselves to scientific studies with all the ardour that now characterizes their literary competition.

Six years ago the viceroy of Fuhkien, now a member of the imperial cabinet, proposed the institution of a competition in mathematics. The suggestion was not adopted; but a few days ago it was brought up in a new form, with the addition of the physical sciences, by Li Hung-Chang, the famous governor of the metropolitan province. When adopted, as it must be, it will place the entire examination system on a new basis and inaugurate an intellectual revolution whose extent and results it would be difficult to predict.

In remodelling her national education, Japan has begun with her schools, and, however reluctant, China will be compelled to do the same. Thus far her efforts in that direction have been few and feeble, all that she has to show being a couple of schools at Canton and Shanghai, with forty students each, three or four schools in connection with the arsenal at Fuhchow, with an aggregate of three hundred, and in the capital an Imperial College for Western Science, with an attendance of about a hundred.\*

The proposed modifications in the civil service examination system will not only invest each of these schools with a new importance, and give a higher value to every educated youth; it will have the effect of creating for itself a system of schools and colleges on the basis of an existing organization.

In every department and district there is a government school with two or more professors attached. The professors give no instruction, and the students only present themselves at stated times for examination. With the introduction of science these professors will become teachers, and each of these now deserted schools a centre of illumination.

\*The number of students in this institution is limited by the fact that they are on government pay and training for government service. The faculty of instruction consists of eleven professors, seven foreign and four Chinese.

A printing office with six presses has lately been erected in connection with the college, with a view to the printing and circulation of scientific works. These are expected to be supplied in part by the professors and students, who are at present largely occupied with the translation of useful books.

## DR. CARPENTER ON EDUCATION.

(Continued from page 192.)

They had never been taught to rest it in that way; that would never been made of the box of cubes; and it was quite a new light to them to find that 8 cubes were required to make a cube of 2, and 27 to make a cube of 3, and 64 to make a cube of 4. That is the right way, to my mind, of learning the real meaning of all these operations that we perform in arithmetic and in elementary geometry.

Let me tell you another reminiscence of my own. I happened to be taught Algebra by one master and Geometry by another; and some little suggestion or clue which I got, gave me the idea that the propositions of the second Book of Euclid might be worked algebraically. Immediately I got this clue, I followed it out with the whole series of propositions; and I assure you it was the greatest delight to me to find out that  $(a + y)^2$  gave exactly in algebra  $(a^2 + 2ay + y^2)$  what in geometry is shown to be the squares of the whole being equal to the sum of the squares of the two parts and twice the rectangle of those parts; so, that the difference of the squares  $(a^2 - y^2)$  is equal to the rectangle of the sum and difference  $(a + y \times a - y)$ . It was a real pleasure to me to follow the series through; and I wondered that was not taught by every mathematical master. But I know that even in one of the best schools in this great metropolis, through which my own sons have passed, that relation was never brought before them.

Now it should be the fundamental part of teaching to make all these separate parts mutually fit into one another. These separate ideas are then seen to have the most intimate relation; for when the algebraic sign is understood to be the sign of a geometrical line or a geometrical surface the whole conception of what geometry is, and of what algebra is, is immensely extended. Take another case. Some in teaching the elements of trigonometry do so algebraically, and some will teach it geometrically, without either teaching the other. Now everybody knows, of course, that the work of trigonometry may be very conveniently, perhaps more conveniently, carried out by algebraical signs than by geometrical forms; but to teach it without geometrical knowledge, seems to me a mere sort of play upon symbols and terms. Yet, my own sons, being taught by a master who was a devotee algebraic in his trigonometrical teaching, I found that they were learning sine and cosine, tangent and co-tangent, secant and co-secant, in algebraical relations to the radius, without having a conception of their geometrical meaning. Now every one who is familiar with geometrical trigonometry will see how perfectly absurd this was: their conceptions were merely of formulae. Take another case, the law of falling bodies. I found some time ago that one of our most distinguished mathematicians, a Cambridge high wrangler, who is at the present time very much regarded for his general scientific abilities into various branches of inquiry, had been accustomed to learn and to teach the law of falling bodies by algebraic symbols and formulae merely, and was perfectly ignorant of the very simple diagram by which I learnt it - which at once presents to the eye the conception of uniformly accelerated motion, and enables you at once to resolve every question relating to falling bodies - out of an old book in Natural Philosophy. The kind of teaching I very

much desire to see carried out thoroughly and effectually, is that which shall develop the doctrines of space and number in connection with actual realities, - and not merely as a set of dry symbols, or figures, or letters, or lines, or anything else, to be worked merely on a piece of paper as part of a scholastic system, without any application to actual practice.

Now, as the converse of that, I will tell you a very curious fact which I learned a few years ago. I dare say you have all heard of George Bidder, who has now retired, I believe, from his profession as an engineer, after a long and laborious life. George Bidder I remember very well by tradition as the Devonshire Calculating Boy; for I believe that before I was born he was brought to my father's house in Exeter to exhibit his wonderful powers of computation, he being an uncultured peasant lad. Now George Bidder worked very long sums in his head with great rapidity; giving the products of long multiplication or division sums, or square roots or cube roots or squares and cubes, far more quickly than they could be worked out by the most accomplished computer on paper. This remarkable power, being developed and trained, brought him into great repute as an engineer; and he was continually called as a witness, during the rapid development of our railway system, on Parliamentary Committees, because he could in five minutes give an answer about quantities to any question which might be asked - the quantity of earth-work which would be required for an embankment, and so on, - when another engineer would say, "I will tell you to-morrow; I must take it home and work it out." In that way he acquired a great celebrity in his profession, and was continually called in as consulting engineer to aid in the framing of plans for those gigantic works which you know have constituted the great feature of the material development of this country during the last forty years. Well, George Bidder, a few years ago, was requested to tell his friends at the Institution of Civil Engineers what were the processes by which he really acquired this great power of computation; for he did not then know the common rules of arithmetic, and I am not quite sure whether he knew the figures which we employ as the symbols of numbers. But he made himself, as a boy, thoroughly acquainted practically with numbers, by beans or bits of stick or grains of corn, or anything he happened to fall in with; he would arrange these, and form his conceptions of numbers upon them; and from these materials he worked out in his own head methods of rapid calculation. He must have had an extraordinary memory and a special aptitude for such work. I am not sure that his method would answer with everyone; but he strongly recommended it; and I have no doubt it would to many minds be of very considerable assistance in using the ordinary processes. But the great thing I would impress upon you is the practical conception of number which in that way was strongly brought before his mind; it was not merely a number, as a figure, which is a mere symbol of a number; but every figure brought to his mind the practical conception of the number of the objects which he might happen to think of, whether beans, grains of corn, or anything else. In this way, it seems to me, by the conversion of the purely abstract conception into reality, we have a sort of balance given to the development of the mind in the ordinary school teaching, which counterpoises its necessary employ-

ment on the other side upon pure ideas—namely, in the cultivation of languages. Now I am second to no one in the appreciation that I have of that culture, looking at it simply as a discipline of the mind, putting aside altogether the question of what is called useful knowledge. There are some, you know, who lay so much stress upon the culture of the mind as an object in itself, they say they would rather have a mind cultivated upon useless knowledge than upon useful knowledge—they scorn the term “useful knowledge.” I do not go to that extent, because I believe that every subject may be taught so as to be made useful in some way or other. The question has been discussed in this hall by much more able scholars than myself so often that I need not touch upon it, as to the value of the cultivation of classical languages, of which the practical utility in after-life is practically small, while, on the other hand, the practical value of modern languages is much greater. I think there are none who would say that it would be well to dispense with Latin or Greek entirely, for the cultivation of modern languages. But I hold entirely with those who say that we never come to learn our own language properly, really to know what the value of words is, unless and until we come to study another language. It is impossible, or, I should say, very difficult, to acquire a knowledge of the finer inflections of language and of the finer shades of the meaning of words, until we come to translate them into another language or to translate another language into our own, which is a converse exercise of the same most valuable kind. But the whole study of language seems to me comparatively useless, if it is not pursued with the most rigid accuracy, and nothing has struck me more, in the large experience I have had of examinations, than to find how excessively loose is a great deal of the reasoning and handling of languages, and how common—and it is very strange to find it so common—is the ignorance of their own language shown by a large number of candidates at these examinations. I see, as you may suppose, many youths—more than a thousand every year—coming up to our matriculation examinations; and after every examination I receive a great number of letters complaining of their rejection in one of more subjects; not every now and then going so far as to say they are quite certain the examiners must have made a mistake about their numbers, that they cannot have properly looked at their papers, or that there must have been a book lost, or something of that kind (I had such a letter a few days ago), and saying they are quite certain they answered all the questions. Yes, but the question is, how they had done the paper—how they had answered the questions? They might cover paper with any amount of “bosh,” and really believe that they had done well. That the curious part of it. That has struck me more than anything else. I hope I am not trespassing too much on your attention, but really some of these subjects are to my mind very important. It is so important that the whole truth should be known about them, that I venture to give these facts from my own experience. It is not my function, of course, to supervise the work of the examiners; but from some particular cause I may be led to look into a paper when a mistake made a very strong impression on me, or perhaps his friends have written to me about it, and I think that perhaps I may be able to satisfy them if I look at it myself; but I have never looked into a paper without

finding the examiners' verdict most thoroughly justified. One of these cases, which happened several years ago, was that of a clergyman, a man in orders, who had passed through one of the smaller Theological Colleges of the Church of England, where the amount of classical instruction was not very great. He was rejected in Latin, in the translation of one of the Odes of Horace, the book which was given out for that year. He wrote to say that he had repeated the translation to the heads of his college, who told him it was quite right, and therefore he was perfectly certain he could not have been fairly rejected. I looked at his paper, and it was full of the grossest blunders that could possibly be made. Whether it was he that was in fault, or his teacher, I do not pretend to say; but there was a case in which a man was perfectly ignorant of his own ignorance, either from having been very badly taught, or from having learned very badly; and hence I say that in the study of languages, accuracy—grammatical accuracy—is, to my mind, one of the first considerations. Let all the ornament come afterwards; let the pretty poetical renderings be given by such as are capable of them; but let us have strict grammatical accuracy in the first place. If that is not attained, the useful discipline of the study of language must lose a great part of its effect.

Now, having thus spoken of what, as it seems to me, should be the foundation of all education, let me say a word or two on Scientific education, because that is only carrying forward that which I have already spoken of. My friend, Professor Huxley, said that science is but disciplined common sense. So it is; all mathematics is but common sense raised to its highest expression in that particular line. What is the meaning of every stage in a demonstration? That you cannot believe the contrary, which would be absurd. Many of our propositions lead up to a *reductio ad absurdum*, and in many others we have the Q. E. D. to end with. That Q. E. D. is the result really of a succession of stages, every one of which must be absolutely certain to our own minds. Why? Because we cannot conceive the contrary, or anything else, to be true. That is what we mean by common sense. When we say, common sense teaches this, that, or the other, what do we mean by it? Why, that we cannot conceive the contrary; and that is, as I say, in the particular straight line of reasoning—mathematical reasoning—the foundation of the perfect certainty that we feel as to the result. Science is simply carrying out objectively, in its application to actual facts, that which I just now spoke of, as what I think ought to be done as much as possible in the teaching of mathematics. It is simply carrying out further the bringing of these conceptions of quantity, of number, of space, and so on, into relation with the actual objective realities of life; and the great value, as it appears to me, of science teaching, lies in the cultivation, in the first place, of the habit of observation, and then of the power of reasoning strictly and accurately upon observation. Mere intellectual ingenuity does not, to my mind, carry the same evidence of general capacity, as is shown by the application of mathematics of great scientific questions. For instance, take the experience at Cambridge this year. We have seen that the senior wrangler of the present year has not gained either of the two Smith's Prizes. What is the meaning of this? The wranglership examination, as everybody knows, is conducted

on this plan. Two examiners are named, who themselves have been high wranglers formerly; and for about six months they exercise their ingenuity in framing more puzzling questions than any which they themselves answered; so that the position of senior wrangler is often obtained by capacity to work out these special puzzling problems. On the other hand, the Smith's Prize examination is carried on by the great mathematical professors of the University, and sometimes with one or two from the outside. I remember Mr. Babbage was named as one of the examiners on one occasion, and he gives in his reminiscences just this very account I am repeating to you. In the Smith's Prize regard is specially had to the application of mathematics to physical science. This gentleman, who gained the senior wranglership, was found to be deficient, as compared with the second and third, in this power of applying his mathematics. He was more ingenious in the solution of difficult problems, but in the power of applying mathematics he comparatively failed. Now, which of those two would be regarded as the more capable mathematician? Certainly I think you would say the first Smith's Prizeman; at any rate, that would be the judgment of all mathematicians who concern themselves with the application of mathematics; because what is the use of the highest development of mathematics if you cannot apply them? You may develop them to any extent as intellectual curiosities. For instance, we have heard a great deal of late of four dimensions of space; and I believe some mathematicians have carried this conception to eight or nine dimensions of space. But these are things we cannot really conceive. We cannot form a tangible, definite idea of even four dimensions of space. The work is all done by a kind of juggling of mere formulas. The rule, then, that I would insist upon in education, is the bringing the mind constantly into contact with what is real; and not developing it further in the direction of pure ideas, than is necessary in order to give the highest value, the completest expression, as it were, to the real. But in giving the perfect and distinct conception of the real, I am quite certain the best foundation is laid for all those higher extensions of reasoning upon ideas, which in the present day are attracting so much of public attention. You find that it is by such men as Professor Huxley, Professor Clifford, Mr Herbert Spencer, and others, whose minds have been trained in objective science, that the highest development is given to that philosophy which is taking so much hold of the public in the present day—that philosophy which leads us into the region of ideas which can be always connected with external realities. I say nothing of certain conclusions of that philosophy, which seem to me to ignore a very important set of realities—our own spiritual experiences; but I hold very strongly that the real mode of pursuing philosophy is, not to go on employing, in the same manner as the old philosophers did, the mere symbols of abstract ideas—words; but to know exactly what we mean by those ideas, the knowing exactly what we mean being the great essence of all the highest philosophical reasoning. Berkeley, I think, says,—“Philosophers have kicked up such a dust that they cannot see through the cloud of it;” this dust being the confusion of terms. The great advantage of the modern philosophy is, that it brings the mind, at one stage or another, into direct contact with external things; philosophical

terms being now carefully scrutinised, their meaning thoroughly sifted, and a definite conception of that meaning being laid down for the basis of all reasoning upon it.

Those are the general views I would present to you upon what should be the objects of education. Of course I have merely spoken of a few things that are uppermost in my mind; I have not attempted to give you a discourse on the whole subject; but as every gentleman who comes here speaks from his own experience, I thought I might speak a little from mine, which is rather a different side to that of others.

Now let me say a few words with regard to the present position of your great Society. It is in every respect a source of the very highest congratulation, seeing that the progress made during this year is something marvellous in the number of candidates who have presented themselves. Only three years ago the number was 2,307; it has gradually crept up until in 1876 it was nearly 4,000; but in 1877 it is nearly 6,000—5,898. Now this is, to my mind, the most satisfactory evidence of the value of the system which your College is pursuing; because, although its aims may not be very high, yet they have the great advantage of enforcing accuracy and care in those early stages of education to which I have especially directed my remarks. Your examinations at once detect that looseness to which I have referred in the translation from classical and modern languages. I am quite certain that my excellent friends who examine in these subjects will at once mark unfavourably anything like a departure from grammatical accuracy; and this is a most valuable check on the loose teaching which I have seen over and over again, and of which I have seen the results in candidates coming up from schools bearing a very tolerable reputation. I remember a young fellow coming up from a school in the country, who had been reading some of the higher Latin authors—Horace, and, I think, Tacitus—to say nothing of Livy and Virgil. Coming up to the University College School, from his account of his reading he was at once placed in the highest class; but they had to put him down three classes, simply because they found he could not give a grammatical rendering of any ordinary Latin sentence. I regard as a most valuable thing the check given by these examinations to that system of looseness, which too many ill-trained masters pass by, because really they have not got the capacity in them to make it better. So again, anything like inaccuracy or carelessness in the working of arithmetic and the exposition of geometry,—all this is at once checked by examination. I am not of those who believe that examinations find out the most capable. I do not believe in competitive examinations. I never could myself excel in an examination of that kind which depends on the power of being able to answer at once, off-hand, some question which is a question of mere memory. I would recommend to those who are really thinking out these subjects, a little book lately published by the Rev. Henry Latham, of Trinity Hall, Cambridge, on Examinations, where they will find a great many very valuable hints. I do not think to any of your examinations these observations would quite so well apply, because your examinations are naturally conducted on primary school-work. But in the higher examination of youths of 16 and 20, where the training and breeding of the

intellectual faculties is the object aimed at, I think Mr. Latham's remarks particularly apply. He suggests that in every examination paper there shall be questions which may be answered merely by memory—what we call book-work; and other questions, not in the form of puzzling problems, but questions which shall test the candidates' power of applying principles; and even in the ordinary school examinations this may very well be introduced. Even in arithmetic the principles might be dealt with, and the question put, Why do you do so and so? Everybody knows the rule of long multiplication; but if asked what is the meaning of the rule, I doubt if there are many of my younger friends who could clearly explain it,—still fewer who could give the meaning of the rule for the extraction of the square root. Yet I think every boy and girl ought to learn it. In that most valuable little book, "De Morgan's Arithmetic," the ground of every process of that kind is set forth; and De Morgan was one of those teachers who could make every subject a means of valuable intellectual discipline. His training in pure mathematics, his training in the axioms of Euclid, was a lesson in logic; and that is what all mathematical teaching, it seems to me, should be. But to come back; I was speaking of examination papers, and what they should contain; and I think even at your stage the examination papers might all be framed in some degree to bring out not merely the actual knowledge of the candidates, but the candidates' power of applying that knowledge. This is the higher part of the function of an examination; the other part merely tests the memory.

(To be Continued.)

#### MISCELLANEOUS.

**A BILLION DISSECTED.**—Mr. Henry Bessemer writes to *The Times* as follows:—

It would be curious to know how many of your readers have brought fully home to their inner consciousness the real significance of that little word "billion" which we have seen of late so glibly used in your columns. There are, indeed, few intellects that can fairly grasp it and digest it as a whole; and there are, doubtless, many thousands who cannot appreciate its true worth even when reduced to fragments for more easy assimilation. Its arithmetical symbol is simple and without much pretension; there are no large figures—just a modest 1 followed by a dozen cyphers, and that is all.

Let us briefly take a glance at it as a measure of time, distance, and weight. As a measure of time, I would take one second as the unit, and carry myself in thought through the lapse of ages back to the first day of the year 1 of our era, remembering that in all those years we have 365 days, and in every day just 86,400 seconds of time. Hence, in returning in thought back again to this year of grace, 1878, one might have supposed that a billion of seconds had long since elapsed; but this is not so. We have not even passed one-sixteenth of that number in all these long eventful years, for it takes just 31,687 years, 17 days, 22 hours, 45 minutes, and 5 seconds to constitute a billion of seconds of time.

It is no easy matter to bring under the cognizance of the human eye a billion objects of any kind. Let us try in imagination to arrange this number for inspection, and for this purpose I would select a sovereign as a familiar object. Let us put one on the ground and pile upon it as many as will reach 20 ft. in height; then let us place numbers of columns in close contact, forming a straight line, and making a sort of wall 20 ft. high showing only the thin edges of the coin. Imagine two such walls

running parallel to each other and forming, as it were, a long street. We must then keep on extending these walls for miles—nay, hundreds of miles, and still we shall be far short of the required number. And it is not until we have extended our imaginary street to a distance of 2,366½ miles that we shall have presented for inspection our one billion of coins.

Or in lieu of this arrangement we may place them flat upon the ground, forming one continuous line like a long golden chain, with every link in close contact. But to do this we must pass over land and sea, mountain and valley, desert and plain, crossing the equator, and returning around the southern hemisphere through the trackless ocean, retrace our way again across the equator, then still on and on, until we again arrive at our starting point; and when we have thus passed a golden chain around the huge bulk of the earth, we shall be but at the beginning of our task. We must drag this imaginary chain no less than 763 times round the globe. If we can further imagine all these rows of links laid closely side by side and every one in contact with its neighbour, we shall have formed a golden band around the globe just 52 ft. 5 in. wide; and this will represent our one billion of coins. Such a chain, if laid in a straight line, would reach a fraction over 18,328,145 miles, the weight of which, if estimated at 40z. each sovereign would be 6,975,417 tons and would require for their transport no less than 2,325 ships, each with a full cargo of 3,000 tons. Even then there would be a residue of 447 tons representing 64,081,920 sovereigns.

For a measure of height let us take a much smaller unit as our measuring rod. The thin sheets of paper on which these lines are printed, if laid out flat and firmly pressed together as in a well bound book, would represent a measure of about 1/33rd. of an inch in thickness. Let us see how high a dense pile formed by a billion of these thin paper leaves would reach. We must, in imagination, pile them vertically upward, by degrees reaching to the height of our tallest spires; and passing these, the pile must still grow higher, topping the Alps and Andes and the highest peaks of the Himalayas, and shooting up from thence through the fleecy clouds, pass beyond the confines of our attenuated atmosphere, and leap up into the blue ether with which the universe is filled, striding proudly up far beyond the reach of all terrestrial things; still pile on your thousands and millions of thin leaves, for we are only beginning to rear the mighty mass. Add millions on millions of sheets, and thousands of miles on these, and still the numbers will bick in due amount. Let us pause to look at the neat ploughed edges of the book before us. See how closely lie those thin flakes of paper, how many there are in the mere width of a span, and then turn our eyes in imagination upwards to our mighty column of accumulated sheets. It now contains its appointed number, and our one billion of sheets of *The Times* superimposed upon each other, and pressed into a compact mass has reached an altitude of 47,348 miles!

Those who have taken the trouble to follow me far will, I think, agree with me that a billion is a fearful thing, and that few can appreciate its real value. As for quadrillions and trillions, they are simply words, mere words wholly incapable of adequately impressing themselves on the human intellect.

**GEOMETRY IN ANCIENT INDIA.**—Dr. Thibault in examining an ancient Sanskrit MS. concerning the construction of altars discovered that the Brahmins by their desire of pleasing the gods by the construction of neat altars were led before the time of Pythagoras to a knowledge of the truth of the theorem in Euclid I, 47.

They worked it out empirically by the construction of a triangle with sides of 3, 4 and 5. Their rule for squaring the circle was also not several places of decimals. They themselves knew that it was only ap-

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proximately correct and therefore described it as *Saricesha* = that which departs from the truth. According to their calculations the ratio of the diameter to the circumference was as 133:355, a ratio which has the advantage of being easily remembered, the student having merely to write down twice each of the first three odd numbers, and then to place the sign of ratio in the middle.

**THE LORD CHIEF JUSTICE OF ENGLAND ON EUCLID.**—Many a man thinks he is capable of becoming a Herschall or an Airy until he arrives at the Asses' Bridge and finds that he cannot get over it. It is one of the finest pieces of strict ratiocination that ever delighted the mind of the true geometer, and any one who has passed it cannot fail to look at it with reverence and delight, as one of the master-pieces of the human mind. Not many a man fails to get over it. Roger Tichborne failed at it and they had to assume the proposition which that marvellous piece of reasoning solves, and had to pass on and deal with the further propositions to which that is the necessary step. But they did get on with the other propositions and came to the end of the book. They mastered that equally sublime piece of reasoning by which the square of the hypothesis is shown to be equal, &c. Roger became able to follow the reasoning and to make out that proposition from the premisses to the conclusion, then they went back and Roger had to follow out the reasoning of the Asses' Bridge. I have not the slightest doubt in the world, that when Roger Tichborne went on board the *Bella*, if you had asked him how to do it he could no more have told you than he could fly. 99 out of every 100 of the young men who pass a preliminary examination at school or college, if asked in after life to work out the propositions in the 1st Book of Euclid would be totally at a loss. They never open a book of Euclid after they leave school. I believe it is a great pity. If you wish to keep your mind open to the true process of reasoning, you cannot do better than do what I may say I constantly do, take down a book of Euclid, and demonstrate one or two propositions. To work out the propositions of Euclid is a discipline for reasoning, more efficient than any supplied by all the books of Logic in the world.—*Sir Alexander Cockburn.*

#### APPOINTMENTS.

*Appointments from the 16th March to 15th May 1878.*

V. Venkataramana Sastri, Telugu Pandit, Normal School, Vizagapatam, to be Telugu Pandit, Substantive *Pro. tem.* in the Rajahmundry College, on Rs 35 per mensem.

J. Purnayya Pantulu, Assistant Master, Zillah School, Berhampore, to be Head Master, Taluk School, Ankapally, on Rs 40 per mensem.

Profidlow Kumar Mullich, to be Assistant Master, in the Zillah School, Berhampore, on Rs 30 per mensem.

P. Vasudera Row, Deputy Inspector of Schools, Cumbam Range, to be Third Master, Zillah School, Kurnool, *vice* J. Subba Row, deceased.

G. Lakshminarayana, Head Master, Taluk School, Ongole, to be Deputy Inspector, Cumbam, on Rs 75.

P. Desika Charry, Head Master, Taluk School, Panruty, to act as Assistant Master, Anglo-Vernacular School, Wallajapet.

H. Venkat Row, Assistant Master, Zillah School, Sydapet, to be Head Master, Taluk School, Panruty, on Rs 30 per mensem.

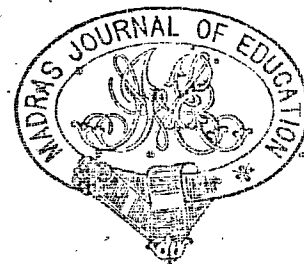
P. Vedanta Charry, B.A., Head Master, Normal School, Trichinopoly, to be Second Master, Zillah School, Sydapet, on Rs 100 per mensem.

P. Rameswamy Iyengar, to be Head Master, Normal School, Trichinopoly, on Rs 45 per mensem.

P. Ranganadul Modalliar, M.A., Head Master, Provincial School, Bellary, to be first Assistant, Provincial College, Cannara.

Mr. U. W. Burroughs, M.A. & B.A., to be Head Master, Zillah School, Chittoor, on Rs 200 per mensem.

(Signed) R. M. MOONWALLA,  
Director of Public Instruction.



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Monthly.]

#### THE MONTH.

In the Report of the Committee appointed to examine Text-Books in Indian Schools, one of the first principles laid down with reference to the instruction of Indian children in English, is that in the lower classes of secondary schools knowledge should be imparted in the Vernaculars. We regret that in most of the Aided and Private Schools of our Presidency town, instruction in all subjects is still imparted even in the lowest classes solely in the English language. Morris's History of India in English, and Geography Text-Books in English are put into the hands of children who are utterly unable to understand an English sentence, and they are made to learn by rote the very words of the Text-books like parrots. By this system the pupils not only make little or no progress in a knowledge of History and Geography, but they get into a habit of using English words and phrases without attaching to them their proper meanings, and this habit so clings to them in after years, that whenever they attempt composition in English, the temptation to use fine phrases though utterly irrelevant, comes upon them too strong to be resisted, and the result is a farrago of pedantic nonsense that causes the world to laugh and their teachers to grieve.

Some excellent remarks by the Director of Public Instruction on this subject will be found on another page of this month's Journal. We fear, however, that without a general understanding among all the Aided Schools in Madras, there is little hope of putting an end to this bad system. We know of one Aided School in which the Head Master insisted that the pupils in the lower classes should learn Morris's History and Dandini's Geography in the Vernaculars, and the consequence was a rush to the school of indignant parents protesting against their boys being compelled to read so many Tamil and Telugu books while they had to read only one or two English books, and enquiring how their sons could in this way ever learn English. Many of the parents at once removed their children to other Aided or Private Schools where all the Text-books used were in English, and where English itself was not taught by the system of translation into the Vernaculars but where the pupils were required to learn English synonyms for each English word, and English equivalents (or supposititious equivalents), for each English phrase in their language Text-books. Alas! we fear, as has been said before, this people does not want to learn, *it only wants to pass*. Much, too much, of this is the fault of our present Examination system.

MR. W. A. PORTER of the Combaconum College has been appointed Tutor to the Maharaja of Mysore. Mr. Gopal Rao, we presume, will succeed Mr. Porter as Principal of the College.

WE regret to learn of the death by dysentery of Mr. Kershaw, the Inspector of the First Division. Mr. Kershaw had been for many years one of the hardest worked of the Inspectors in this Presidency. As the Director of Public Instruction remarks in his last Report, "the area of the First Division is enormous, there is not a mile of rail in any part of it and it contains extensive hill tracts in which the climate is unhealthy and travelling is attended with great expense and difficulty."

We fear that, like the late Bishop Milman, Mr. Kershaw has fallen in the attempt to do what should have been the work of three and not of one man. We understand that Mr. Bickle, now Acting Inspector of the Fifth Division, will probably be transferred to the First Division.

MR. GEORGE THOM, late of the Doveton College, Madras, and subsequently of the Gymnasium, Old Aberdeen, has just been appointed Rector of the Dollar Academy in succession to the Reverend William Byrnie.

THE Committee of Council on Education in England have issued the following salutary instructions to Inspectors of Schools. Perhaps there are some even among our Indian Inspectors and Deputy Inspectors engaged in the examination of Aided Schools who may profit by carefully reading over these rules:—

"You will bear in mind that anything like dictation to teachers, as if they were in any sense Officers of the Department, or responsible to any one save the Managers of their Schools, should be very carefully avoided. It is no part of an Inspector's duty either to find fault with or to reprove a Teacher. If he thinks it either necessary, or a kindly act, to give advice, or warning, to a Teacher, it should not be done in the hearing of the Scholars or Pupil Teachers.

But, above all, it is incumbent on an Inspector to show, by his manner in examining, and dealing with the classes and with individual scholars, that the main object of his visit to a School is to elicit what the children know, and not to prove their ignorance. That object is entirely defeated, if by a harsh, impatient, or indistinct manner of questioning the Scholars, he frightens or confuses them, or if he puzzles them by fanciful and unreasonable questions."

A young girl from an Aided Native Christian School at Dehra in the North-West Provinces has succeeded in passing the Matriculation Examination of the Calcutta University.

Five Candidates from the North-West Provinces appeared for the M. A. degree of the Calcutta University and all five were successful. As the Administration Report observes, the fact that three of the five were Mahomedans would seem to indicate an increasing willingness on their part to profit by the means of obtaining the higher education afforded by the State Institutions of the country.

WE learn from the same Report that it has been found advisable to abolish the Anglo-Sanskrit department of the Benares College, the results of which after a prolonged trial of nearly thirty years have been most disappointing, and quite disproportionate to the heavy expenditure incurred. Every student was the holder of a state scholarship, the withdrawal of which was tantamount to cessation of attendance. The end aimed at, viz., the production of a



body of vernacular literature fitted to communicate the results of European research to the people of the country in a familiar form, has never been attained. The costly experiment has proved an utter failure, and the Government felt that there was no resource but to abolish the department.

In another place will be found an extract from the *Westminster Review* that will be of interest to students preparing for the B.A. Examination of 1880; at the request of several correspondents we shall give also in this and in succeeding numbers of the *Journal*, Notes on Lytton's *Secret Way* in the *Lost Tales of Miletus*, set for the F. A. Examination of this year.

AFTER our notes were in type we received from Cuddapa a small pamphlet of notes on this poem. We hope to notice it in our next issue.

THE Hindustani Anthology of the Madras School Book Society referred to in the curriculum for Mahomedan Schools published in the Director's Proceedings, No. 1,991 of the 22nd May 1875, has appeared under the title of *Risala-i-Mauzunah* and can be applied for by the Headmasters of Mahomedan Schools through the District Curators.

This book is also intended for examinations held under the first, second and third standards of the new results rules.

THE Ernacollum High School has suffered a great loss by the disconnection therefrom of its Second Master, Mr. D. M. Cruickshank, M. A., who left Ernacollum on Saturday last for Madras, where he has obtained the post of principal of Patchaapp's High School on a salary of Rupees 300 per mensem. It is the general impression that much of the success of the Ernacollum High School was due to the indefatigable exertions of Mr. Cruickshank, and it is to be hoped that in his successor, Mr. Sealy will find as valuable an assistant as the late Second Master. — *Cochin Argus*.

GOVERNMENT have sanctioned the proposal of the Director of Public Instruction to close the Taluq Schools at Purushotnampore in Gopjan, and at Tindavanam in South Arcot, to withdraw two scholarships, and to appropriate the savings accruing therefrom to raise the standard of the School at Berhampore, and to appoint a graduate on Rs. 150 per mensem to work up to the First Arts Examination. The Director is in future to afford Collectors of districts an opportunity of expressing their opinion on proposals affecting their respective districts, either for opening or closing of schools, or for any changes which the Director may deem desirable.

## THE LOST TALES OF MILETUS.

The people of Asia Minor, who possessed the fairest portion of the globe, were addicted to every species of luxury and magnificence; and having fallen under the dominion of the Persians, imbibed with the utmost avidity the amusing fables of their conquerors. The Milesians, who were a colony of Greeks, and spoke the Ionic dialect, excelled all the neighbouring nations in ingenuity, and first caught from the Persians this rage for fiction: but the Tales they invented, and of which the name has become so celebrated have all perished. There is little known of them, except that they were not of a very moral tendency, and were principally written by a person of the name of Aristides, whose tales were translated into Latin by Sisenus, the Roman historian, about the time of the civil wars of Marius and Sylla. Huet, Vossius, and the other writers by whom the stories of Aristides have been mentioned, concur in representing them as short amatory narratives in prose: yet it would appear from two lines in Ovid's *Tristia*, that some of them, at least, had been written in verse:—

*Junxit Aristides Miletu carmina secum—*

*Pulsus Aristides nec tamen urbe sua est.*

But though the Milesian tales have perished, of their nature some idea may be formed from the stories of Parthenius Nicerus, many of which, there is reason to believe, are extracted from these ancient fables, or at least were written in the same spirit. The tales of Nicerus are about forty in number, but appear to be mere sketches. They chiefly consist of accounts of every species of seduction, and the criminal passions of the nearest relations. The principal characters generally come to a deplorable end, though seldom proportioned to what they merited by their vices. Nicerus seems to have grafted the Milesian tales on the mythological fables of Apollodorus and similar writers, and also to have borrowed from early historians and poets, whose productions have not descended to us. His work is inscribed to the Latin poet Cornelius Gallus, the contemporary and friend of Virgil. Indeed the author says that it was composed for his use, to furnish him with materials for elegies and other poems.

The inhabitants of Asia Minor, and especially the Milesians, had considerable intercourse with the Greeks of Attica and Peloponnesus, whose genius also naturally disposed them to fiction: they were delighted with the tales of the eastern nations, and pleasure produced imitation.

The Milesian Fables had found their way into Italy even before they flourished in Greece. They had been received with eagerness, and imitated by the Sybarites, the most voluptuous nation in the west of Europe; whose stories obtained the same celebrity in Rome, that the Milesian tales had acquired in Greece and Asia. It is not easy to specify the exact nature of the western imitations, but if we may judge from a solitary specimen transmitted by Aelian in his *Varia Historia*, (L. 14, c. 20) they were of a facetious description, and intended to promote merriment. A pedagogue of the Sybarite nation conducted his pupil through the streets of a town. The boy happened to get hold of a fig, which he was proceeding to eat, when his tutor interrupted him by a long declaration against luxury, and then snatching the dainty from his hand, devoured it with the utmost greed. This tale Aelian says he had read in the Sybarite



stories and had been so much entertained that he got it by heart, and committed it to writing as he did not grudge mankind a hearty laugh!

Many of the Romans, it would appear, were as easily amused as Ælian, since the Sybarite stories for a long while enjoyed great popularity; and, at length, in the time of Sylla, the Milesian tales of Aristides were translated into Latin by Sisenna, prætor of Sicily, and author of a history of Rome. Plutarch informs us in his Life of Crassus, that when that general was defeated by the Parthians, the captives found copies of Milesian and Sybarite tales in the tents of the Roman soldiers; whence Surenæ expressed his contempt for the effeminacy and licentiousness of his enemies, who, even in time of war, could not refrain from the perusal of such compositions. — Diction.

Miletus was one of the greatest cities of Asia Minor; it belonged territorially to Caria and politically to Ionia, being the most S. of the members of the Ionian confederacy. The city stood upon the S. headland of the Ægeus, Latmicha, opposite to the mouth of the Mæander, and possessed a distinct harbour, protected by a group of hills; its territory was rich in flocks, and the city was celebrated for its woollen fabrics, the Milesia Pellora. At a very early period it became a great maritime state, and founded numerous colonies, especially on the shores of the Ægeus. It was the birth place of the philosophers, Thales, Anaximander, and Anaximenes, and of the historians Ctesias and Herodotus. It was the centre of the great Ionian revolt against the Persians, after the suppression of which it was destroyed (B. C. 494). It recovered sufficient importance to oppose a vain resistance to Alexander the Great, which brought upon it a second ruin. Under the Roman Empire it still appears as a place of some consequence. — SMITH'S CLASSICAL DICTIONARY.

THE STORY OF THE SECRET WAY. — A band of Scythians under the leadership of OMARTES, giving up their wandering Bedouin life, settled down and built themselves a fortified town, with a palace in it that eclipsed the grandest houses in Susa. Omartes had an only child, a beautiful daughter named ARGIOPE, who, at the time of the story had just blossomed into womanhood. The king, seeing that the hour was come when his love no longer contented his child, and anxious to make the best match he could for her, offered her hand to a young and noble Median prince named ZARIADES. The young prince declined the offer with thanks, although warned that astral influences seemed to point to a different kind of answer. For this refusal, which he looked upon as an insult, as well as on account of former disputes, Omartes marched with his band against the Medes. The battle between the two armies was a doubtful one; the Scythian cavalry charged gallantly and carried everything before them; their inexperienced and unsupported infantry, however, turned and fled. When at the conclusion Omartes and his troopers wheeled round, they saw that their enemies were really masters of the field. Feeling their chance gone, they retreated. The Medes followed them up to their city, and laid siege to it. For a little time, there seemed to be some chance of a peace being made, but the haughty way in which Zariades demanded earth and water in token of homage cut short the negotiations. Omartes now became very anxious for his daughter; and his faithful Telantias, the Scythian high-priest,

advised him to marry her to some strong young noble of their own people, and at the same time told him of the existence of an underground passage a "Secret Way" by which Argiope and others might escape from the city. A brave but unprincipled officer, SEUTHES, was also let into the secret. He at once informed the Median commander of it, and undertook to guide him and his men through the passage. The noble Zariades rebuked the traitor, but thinking it imprudent to throw away such a chance, agreed to go into the palace by this secret way. The party went on till they plainly heard voices from the banquetting hall of the palace. Telling the others to fall back and wait for a signal from him, Zariades alone entered. Just at this moment, Telantias led in the princess, and the king calling to his daughter to fill a cup with wine, told the young captains round his table, that the one of them who received the cup from her should be his son-in-law. Argiope mechanically did as she was bid, and vacantly gazed around her. Suddenly, however, the light came back to her eyes and the blood to her cheeks, and with quick gliding steps and the rapt looks of a somnambulist, she passed along to the further end of the hall to the godlike form of young Zariades, who eagerly held out a trembling hand for the cup, while he sank upon his knees. Zariades now saw in the flesh the lovely damsel that used to visit him in his dreams, and out of loyalty to whom he had declined the offer of Omartes; and the princess too recognized in the prince the form that constantly haunted her from the moment of her ripening into womanhood. Zariades now explained his presence to the disappointed suitors and their angry king, and begged of the latter the boon once offered but rejected in ignorance, — the hand of his beautiful daughter.

The Secret Way is written in four-line stanzas. The first line of each stanza consists (as a rule) of five iambic feet, as in

(v. 29). Nôr thiou | nôr î | tho wôrkh | ôf these | things nôw |

The second line also is an iambic pentameter, as in

(v. 34). Thô all | thê crân | nîes piêce | an î | cý wînd

The third line is an iambic trimeter, or three-foot line, as

(v. 3). Fôrsoök | thô sîn | plô wâys |

The fourth line is like the first and second, but with the addition of an extra syllable, as

(v. 8). Ā rē | gāl pā | lāce dwār | iug pîles | in Sūsā

This is the normal plan of the versification. To vary the metre however, and prevent monotony, Lytton often uses a trochee instead of an iambus. That is to say, he reverses the position of the accent and makes the first syllable accented and the second unaccented, as:—

(v. 17). Where is | beheld | the pa | lace of | a king

(v. 31). None till | they reach | the tomb |

(v. 76). Bîgōding | that thought | which was | her joy | and trouble |

(v. 214). Neurest | his throne | the chief | priest of | the Magi |

Lord Lytton himself speaks of the metre as an "experiment" which he had long cherished a desire to adventure; viz., "that of new combinations of blank or rhymeless metre, composed, not in lines of arbitrary length and modulation (of which we have a few illustrious examples); but in the regularity and completeness of uniform stanzas, constructed upon principles of rhythm very simple in themselves, but which, so far as I am aware, have not been hitherto adopted, at least for narrative purposes."

## NOTES.

(The numbers below refer to Stanzas, not Lines).

1. *The wide plains* of Scythia stretched from the Carpathians to the Don.

*Tanais.* The River Don.

*Pasture needs.* 'Pasture' is a verb here.

*Scythian Mars.* Mars was properly the Roman God of War: the word is here used for 'war' or 'warfare.'

2. *Dwarfing piles, &c.* Surpassing in height the grandest buildings of Susa. Compare Stanza CXL. "Pile up walls out-topping Babylon."

*Susa.* The winter residence of the Persian Kings. The remains of the great Palace at Susa have been recently disinterred by English enterprise.

3. *Triple brass.* Strong and durable. Cf. Horace's "*aes triplex*," (I. Od. III. 9.)

*Siege proof.* *Proof* is an adj.; see stanza 79.

*Cyclops.* The name Cyclopiæ was given to the wall built of great masses of unhewn stone, of which specimens are still to be seen at Mycenæ and other parts of Greece, and also in Italy. They were probably constructed by the Pelasgians, and later generations, being struck by their grandeur, ascribed their buildings to a fabulous race of Cyclops, creatures with round eyes in the middle of their foreheads, of gigantic stature and strength, and of lawless, cannibal habits.

4. *Counting on warm praise.* Fully expecting his hearty approval.

5. *Beseem* = seem proper to, become. *King* is in the obj.

*Phrygian towns.* Phrygia, a district of Asia Minor, was famous for its linen, white and coloured. Thyatira (see Acts of the Apostles, xvi, 14) was one of the leading towns in this trade.

*Colchis.* This country bordered on the eastern shores of the Caspian. It also was famous for its linen.

*Ormus.* An island in the Persian Gulf, formerly a great place for trade. The 'pearls' probably went there from India.

6. *Sidonian.* Sidon was a great Phœnician port on the Mediterranean.

*Corinthian bronze.* Corinth in Greece was famous for its bronze. The "Beautiful Gate" (Acts, iii, 2) of the temple of Jerusalem was of this material.

*Egypt's vast symbol gods.* The Egyptian god Apis was worshipped at Memphis under the symbol of an ox; so also Osiris was worshipped under the symbol of an ibis, a kind of stork. The Egyptian idols were generally symbolic of the powers of nature. Among many other objects the Egyptians worshipped

"Vast scurabæi, globes by hands upheld,  
From chaos springing, mid an eadless field  
Of forms grotesque, the sphinx, the crocodile  
And other reptiles from the slime of Nile."

Probably there may also be an allusion to the Sphinx and the Obelisks. "It is considered by Egyptologists that the Obelisk and the Pyramid were forms symbolical of the rising and the setting sun. Obelisks were erected on the East of the River Nile, Pyramids on its Western bank. The Rising Sun which extended to noon-day, was the visible manifestation in their Pantheistic Nature worship of the Generative and Preservative power which they worshipped by the name of Ra or Life. The Setting Sun ultimately including Night was the token of Death and the dark underworld into which the human soul would descend like the souls of other animals as was signified by the daily sinking of the sun beneath the horizon. This was called *Tum* and the pyramids dedicated to *Tum* were the sepulchres of dead kings and illustrious persons."

*Hellas.* The true name of the country we call Greece. The poet means that Omartes was a great collector of articles of *verba*, and in his collection were symbol-gods of Egypt, (obelisks, sphinxes, bulls, crocodiles, hippopotami, &c.), and also the man-shaped or anthropomorphic deities of Greece.

7. *Breaking time.* Metaphor. [Explain *spray*.]

8. The Priest's answer reminds us of the saying of Solon in reply to a question of Croesus, that we can consider no man happy until we have seen the manner of his death.

*Gadca.* Now Cadiz in Spain.

11. *Wain-borne homes* = homes carried on wagons = tents.

*The rudest champion.* See stanza 34.

13. *For whom...ambition.* In the opinion of her fond father, no throne in the world was exalted enough for her to share it.

14. *Aphrodite.* The Greek name for the goddess of beauty and love, known to the Romans as Venus.

*The Graces* or *Loves* were three goddesses "who enhanced the enjoyments of life by refinement and gentleness." Their names were Euphrosyne, Aglaia, and Thalia.

*Subjects.* Subdues.

15. *Shame-faced.* "Shamefast" is the older and more correct form of this word.

*Violet-crowned,* in Greek *Iostephanos*, was a common epithet for Athens on account of its 'violets.'

19. *Choir.* Company. *Brooding.* Nursing in secret. The participle is here transitive.

20. *The sunny bridge, &c.* The unreserved freedom with which, as is usual with children, she had uttered the thoughts of her heart, was now at an end. Argiope was now in love, and with maidenly reserve she naturally shrank from confiding this secret even to her father. This was the first time in her life that she had kept back her thoughts from him; as a child she had uttered freely whatever thoughts had come into her heart, but the knowledge that she was a woman had now come upon her, and she no longer felt, acted, and spoke as a child.

(To be continued).

## EXAMINATIONS.

(Third Notice).

(Concluded from page 215).

Our notice of Mr. Latham's book may appropriately be continued by the following summary as to what Examinations can and cannot do.

"We limited our enquiry at starting to those constituents of ability which the framers of examinations have in view, and which examinations test. This enquiry is now at an end—we find that we may expect to find power of attention, memory in various shapes, delicacy of perception, concentration, imagination and reasoning power, and that examinations will help us to judge of how far these qualities exist. We see moreover that behind all these qualities lies something which a mental physiologist would call *mas-tiveness* or robustness of brain, and which we call energy of mind—of this, so far as it is brought out in dealing with books or ideas, we can judge fairly, we see that knowledge has been got, and know that brainwork must have been done to get it—and in addition we note indications of strength or feebleness of will: we can find out from a set of papers pretty well whether a man knows his own mind or not.

But lest we should mistake the knowledge of a part for the whole, we must cast our eyes over the range of qualities which examinations leave unexplored. On so doing we at once see another variety of that mental energy just spoken of, or rather another side of its sphere of work: we learn nothing of it when it is turned to dealing with *action* or with *men*. Indeed all qualities connected with action, and all that involve sympathy with human beings, or the power of influencing them, all that have to do with tact, address, and personal manner, lie outside the range of our testing apparatus. Most moral qualities do so also. We cannot even tell whether to refer an individual to one or the other of the two types, which are the foci round which a large portion of mankind is grouped. We cannot see whether he is likely, in any given position, to do as much or as little in the way of duty as he possibly can.

It is true that a student must have done work to get his learning together, but it may have been done under something approaching to compulsion, either that of masters or of an overwhelming inducement. We can hardly guess at all, especially from a single examination, whether the work has been done willingly and conscientiously, or by a person of good parts, but no intellectual tastes, who is looking forward to winning a prize, in order to indemnify himself for his drudgery by future advantages."

On the value of "the Essay" as an instrument of examination, the following is remarkably good:—

"By setting an essay we may, no doubt, often mark a particular kind of talent; we may bring out some clever men, though, if we give too great a share of consideration to the results of the essay paper, we may do injustice to many varieties of ability. There is, moreover, a danger of our being taken in by some plausible personage who has a knack of manipulating "masses of thought" taken out of his tutor's note-book, with such dexterity as to give the im-

pression that he has gone through the process of thinking out these thoughts, that he is quite familiar with them, and tosses them to and fro with giant strength. We have heard of a mine in the far west in which splendid diamonds were found by those who were sent to report on its value, but in which none have ever been found since; and I fear that some of these well-prepared essayists would prove as fallacious as the mine, if they were picked out on the score of the profound views that they appear able to evolve at will. It might be found that they, like it, had been "salted" for the occasion.

A man who has been thus provided with "views" and acute observations which will "come in" under many heads, may have destroyed in himself the germs of that power which he simulates. He might have had a thought or two, now and then, if he had been left alone—but if he is made first to aim at a standard of thought above his years, and then finds that he can get the sort of thoughts he wants without thinking, he is in a fair way to be spoiled for a thinker. The higher and more speculative the nature of the subject is, the more certainly will young men be driven to tutors in order that they may lay up a store of general reflections or modes of dealing with such subjects, and what is more important, the worse will be the effect on their own minds. I have heard of young men being allowed three hours, without notice of the subject, to deal with the following:—"Trace the effects of Christianity in forwarding or retarding the progress of civilisation." If we lead a young graduate to think himself competent to despatch in a forenoon a question on which a man's life-time might be spent, can we be surprised if he turn out a self-sufficient coxcomb? and can we wonder at his being incapable of reverence or conviction, when he has been led to look on Christianity and progress and civilisation as only a few of the counters with which students and tutors and examiners play the game of which a Studentship or a Fellowship is the prize?"

The following remark is full of force:—"If Examiners were to draw the bulk of their questions from their own fund of knowledge without using books except for reference, the value of their examinations, both as a test of attainment and as an educational appliance, would be greatly increased." The views enunciated in the following as to the principle on which a paper in an examination to test *acquirements*, should be valued also seems to us sound, though some of our readers may not be disposed to concede so much:—"When a candidate's answer is wrong, he commonly receives no marks for that particular question, but the nature of the blunder may be such as to show that his conceptions are wrong altogether, or that he cannot be said to have any conceptions at all, right or wrong, upon the matter; in this case, those of his answers in this subject that happen to be correct will not indicate knowledge of any value, but only the recollection of the words of some manual, and no credit should be given for them.

Again, various sciences of experiment and observation are now made the subject of paper examinations. Such examinations are never quite satisfactory, but if the student answer nearly all the questions rightly, this will shew a valuable knowledge of his science. When, however, a student gets only a small proportion of the marks,—150 marks for instance out of 500 in Geology.—this does not indicate knowledge of any practical value at all. If we were to show a student

a piece of dolomite, he would probably call it chalk; he has never made out how the strata lie in a district, and does not know how to set about it; and what he has learnt is the nomenclature of the science out of a manual. The geological student should know this nomenclature, but its value lies in its being applied further on; and if the student do not go far enough to use it, he might as well have learnt a page or two out of Johnson's Dictionary.

Hence no credit whatever should be allowed on the score of acquirement for scanty knowledge of a subject of this nature displayed on paper. If a candidate can perform even a few practical processes, or identify specimens in branches of Natural History, he may claim some credit.

The above reminds us very forcibly of Mr. Porter's humorous remarks on the papers in physics executed by the candidates for Matriculation a year or two ago.

The difference between *study* and *exam* is well brought out in the following remarks. "There is a sort of knowledge of history which is got up to be written out; which does not come from reading authors—for a good author can never be read without profit—but from compendia and tutorial help; and this is *artificial*, in our sense of the word—it is acquired for use in examinations only. The essence of history lies in its being a *chain* of events; but the examinee sometimes resembles one who is in possession of a handful of the *links* of the chain, only they are all loose in his pocket. This may properly be called "*exam*." These *links* are scraps of information sometimes given by tutors, or taken down in Lectures, or "got up" from a note-book borrowed from a friend, or looked out in a manual the day before. They consist of "short accounts" of "leading events," and of "brief notices" of "eminent personages."

An Examiner can hardly set a paper so as to give no opening for such scraps of information. But when a candidate picks out a date from one question, and a name or leading event from another, but treats no matter as a whole, and there is no appearance of there being any frame work of knowledge in his head—anything to fit his isolated facts into—then whatever be his aggregate of marks, the value of his knowledge is nothing.

"There is another kind of spurious knowledge of a more ambitious description. It consists of what may be called ready-made "views." The student is always ready with an opinion on the leading questions of history, but he has never formed an opinion in his life. "The tendencies of events" and "the influences of principles" are described in tutorial manuscripts and given to pupils. An Examiner will be on his guard when he meets with stupendous wisdom, or patches of reflection in a different style from the rest of the pupil's work."

The following is also very true:—"The knowledge that is got by much *telling* and *showing* on the part of the tutor is much less permanent than that which is due to good work done by the pupil himself, but while it lasts it is hardly to be distinguished from this, and it brings its possessor profit in examinations. A man can be got over more country by being carried over every ditch—but then he never learns to leap; so pupils go further by having every difficulty forestalled, but they do not learn to use their brains and depend on themselves."

We may end our notice of this valuable book by remarking that there is much in it that we have unavoidably passed over; much, for instance, regarding Scholarships and Fellowships, and some on what is rather of local than of general interest. Omitting such, there is enough to render the book of value to all engaged in education.

### THE DIRECTOR ON HIGHER-CLASS SCHOOLS.

WE quote the following from the last Report of the Director of Public Instruction. The Order of Government states that the Director's remarks have been read with much interest, and suggests that Colonel Macdonald might again address the Syndicate of the University on the comparative merits of Paraphrases and Translations as a test of knowledge of English, as the discussion of the question would be considerably facilitated by the experience which has now been had of the system of Paraphrasing.

The small number of pupils who pass year after year from many of the larger Higher-class schools cannot be regarded as a satisfactory feature in our educational system. If promotion from class to class were properly regulated, every boy in the Matriculation class, unless prevented by illness or some special cause, ought to appear as a matter of course, for the Matriculation examination, and the proportion of failures should not be larger in this than in any other University examination. But many heads of schools seem to imagine that they are responsible for the failure of only those boys whom they have recommended to go into the examination. And it must be remembered that even those who pass do not in many cases succeed until they have been up two or three times. The reports of schools to maintain a discreet silence on this point, and no statistics relating to it are available, but there is reason to believe, that the number of candidates who pass after one or more failures is very considerable. Two years ago Mr. Powell pointed out that the evil to which I refer reaches its maximum in the schools of the Presidency town, where it might be supposed that the schools, with the great advantages which they enjoy, would reach a high standard of efficiency. Mr. Fowler in his report this year compares the strength of the matriculation classes in the eleven Higher-class schools of Madras with the number of pupils who passed, and shows that while the Matriculation classes contained 266 pupils on the 1st October, the number who matriculated was only 67, being about one in four on the whole, while in several important schools the proportion was one in six, seven and even eight.

Another unsatisfactory feature of the Madras schools, which is also noticed by Mr. Fowler, is the important fact prominently brought out this year by the new division of schools into departments, that a large number of native boys in elementary classes are receiving all substantive instruction through the medium of a foreign language. In Government schools this was put a stop to by Sir A. Arbuthnot many years ago. In a Zillah school the pupils learn English as a language in the three lowest classes, but all instruction in Arithmetic,

Geography, and History is imparted in these classes through the medium of the vernacular. A good deal of the unsound work which is done in many of the aided schools of Madras is probably due to this pernicious practice.

Much mischief is also done in the elementary and middle classes of many schools in various parts of the Presidency by the employment as English teachers of men who have passed for the fourth and fifth grades, but whose knowledge of English is so limited that they cannot speak half a dozen consecutive sentences correctly. It is to be hoped that by degrees these inferior teachers will be got rid of. In the meantime they might be restricted as much as possible to teaching such subjects as they know, through the medium of the vernacular. In the Presidency towns there seems no reason why elementary classes should not be taught English by East Indian women, who have passed the Teachers' Certificate examinations. In Scotland and America it is found that women make better teachers than men for young boys, and a certificated East Indian school-mistress would probably teach English better than a Hindu of inferior qualifications.

In the upper classes English composition and translation have never as a general rule received the attention which they deserve, and for this the University must, I think, be held to some extent responsible. Composition has never been properly tested in the Matriculation examination. Three years ago Mr. Bowers quoted the following specimen of a letter which he had received from a Head Master, who, after spoiling two schools, complained of not being allowed to try his hand on a third in the following strain:—

"While all those that passed after me, as well as others behind me, in teaching-power were offered with nice Head Masterships, it is certainly nothing but my greediness that has brought me to this crisis of turning my application an abomination to my patron, as not to let his honor consult over the state of a Normal Student, a scudor, and the then, as well as the presently, only one merited as the second for the whole Government Normal School. What else can a poor boy of my age do if a chance of displaying his talents in his appointed school is not let to him, and even the school perfectly refined by him has yielded no real Examination of the then educated students. Honored Sir, from my younger days I was gifted with the sure idea of serving in no other department than but this Educational Department. Cursed be my heart if I ever formerly open myself to such excess as practising disobedience and negligence, the source of idleness. Honored Sir, is it not a long speech for me to make, who has partaken of honor's hospitality to ask some birth, if I cannot keep my brutal inebriety within the veil of my pavilion that I must need show my shame to all Christendom. Although honor still held me so good a reveller, that your honor wonder at quitting my birth, yet, believe me, my bosom feels so free from the wasting fire, which for so many days scorched me, that I care not how soon I expose it to honor's royalty."

Mr. Bowers made the following remarks with reference to this letter:—

"The foregoing elegant extract may also serve to illustrate a point that I have, in my special reports on the schools inspected, dwelt upon with perhaps a wearisome reiteration, the bad system on which English is generally taught. The scholars in our Anglo-Vernacular schools carefully get up their English text-books, but do not learn the English language. They commit to memory an infinite number of phrases and words; but they

are not acquiring, as they should, the power of understanding English, or of using it as a mode of expression. Their English writing is a sort of tessellated composition, made up of all the bits of striking phraseology which they have stored up in the course of their reading. This defect, I think, is owing, in a great measure, to the prescribing of text-books for the Matriculation examination, instead of requiring a certain standard of knowledge of the English language. The writer of the foregoing extract was, I believe, the first student of his year in the Matriculation examination; and it is not at all unusual for candidates to pass the University Test with flying colors, who cannot in their own classrooms undergo with any success the mildest *résumé* examination."

The Matriculation examination does not turn now so much as it did on the text-books, but one paper is still devoted exclusively to the text-books, while the other paper contains pieces for paraphrase not selected from the text-books, and questions on the language generally. Thus the system of paraphrasing still forms the most prominent feature in this examination, and it may, I think, be regarded as having largely contributed to the formation of the singular style, which is so common in native composition. On this point I may quote the following remarks of the Committee for the Revision of School Books:—

"As the system of paraphrasing is one which extensively prevails in this Presidency, some remarks on this subject may not be out of place. In England, we believe, the practice is known only in village schools and training colleges, and is tolerated in them solely because the pupils learn no other language but their own, and cannot, therefore, be exercised in translating. As far as we are aware, there is no country in Europe in which foreign languages are taught in this manner. The practice seems to us calculated to destroy all literary taste, and to accustom the pupil to a vicious and artificial style, which has never existed in English literature. One of the first lessons which a pupil ought to learn is that, if a great master of style has used a particular word, it is probably the best and possibly the only word which he could have used. If he has placed a word in some particular position, he has probably had good reasons for doing so. Under the paraphrasing system all this is entirely lost sight of. The 'words that breathe and thoughts that burn' are travestied in the grotesque phraseology of an Indian school boy, and Shakspeare stands before us in rags, while Milton, maimed as well as blind, limps past on crutches."

One of the most effectual modes of learning a language is constant practice in translating from and into the language. It may be said that this is and always has been required. No doubt even the old rules prescribed that easy sentences in the two languages in which the candidate was examined were to be given for translation, the one into the other, and the rules now in force direct that there shall be a paper consisting wholly of passages for translation from English into the second language, and from the second language into English, but the mode in which these exercises are done does not come in any way under the cognizance of the English examiners nor is the result regarded as at all a test of the candidate's knowledge of English. The papers are looked over by the Vernacular examiners, who are sometimes native gentlemen with a more or less imperfect knowledge of English themselves, and the marks given for translation belong to the optional language branch, and do not affect the position of the candidate in the English examiners' list. In Europe if a boy translates a passage from Livy or Herodotus into his vernacular, that is

regarded as an examination in Latin or Greek. If he translates a passage from his vernacular into Latin or Greek, that is also regarded as an examination in Latin or Greek. In the case of a Hindn boy, translation from or into English ought on the same grounds to be treated as an examination in English, but it is viewed here as an examination in the vernacular. Many years ago I addressed a letter to the Syndicate pointing out all that I have now stated, but without any result.

Reading is not tested in any way in the Matriculation examination, nor is the candidate required to show that he possesses any colloquial knowledge of the language. No attention is paid to hand-writing; although Mr. Powell more than once brought the matter before the Syndicate. There is also no test in spelling for this examination, although marks are no doubt deducted for bad spelling in the English language papers. In 1873 Government called on the Commissioner for the Unconventured Civil Service examinations to report whether matriculated students should be deemed eligible for employment under Government, unless they had in addition passed in writing and spelling. In July 1875 the Commissioner recommended that they should be required to pass the Spelling and Writing tests, and an order to that effect was issued in December. It seems a matter for regret that any necessity should have existed for the Institution of a supplementary examination of this nature.

### THE IMPORT AND EXPORT TRADE OF MADRAS.

(From Mr. Gallon's Report for 1876-77).

THERE was a falling off both in the import and export trade with the United Kingdom amounting to 21 and 6 per cent. respectively. England takes the larger portion of the exports of almost all the articles and supplies the principal articles of import, so that these figures indicate a considerable depression in trade. With Austria the import trade is of no importance, but there are generally considerable exports of coffee and cotton to that country. In 1876-77 the exports to Austria fell off by nearly 60 per cent. France supplies this Presidency with apparel and liquors and takes coffee, cotton, seeds (gingelly), and spices. The imports, which consists of articles in demand among the higher classes of Europeans in this country, fell off but slightly, but there was a large decrease amounting to 22 per cent. in the exports. With Holland there was till recently but very little trade, but in 1875-76 the value of cotton exported amounted to nearly 4 lakhs of rupees; in 1876-77, however, the exports fell again to a little over 2 lakhs. Italy takes cotton and coffee. The exports of these articles in 1876-77 decreased by 67 per cent. The exports to other countries in Europe exhibit an increase as coffee valued at 3 lakhs of rupees was for the first time exported to Portugal. The trade with Mauritius and Bourbon consists of exports of rice and seeds. There was a very large increase in the exports to other countries in Africa, the increase consisting mainly of large consignments of indigo to Egypt, for which there appears to have been an unusual demand. With America the trade is very limited: Of the countries in Asia trade is carried on principally with Ceylon, the Straits Settlements, China, Persia, and Turkey.

Rice and other grains, cotton piece-goods, and animals are the principal exports to Ceylon, and the imports from that country consist chiefly of cotton piece-goods. In 1876-77 there was an increase of 9 per cent. in imports, while exports decreased by 7 per cent. From the Straits Settlements, spices, gums, and metals are imported, and the exports to those places are cotton piece-goods and hides and skins. There was a slight increase in the exports and a large increase in the imports (22½ per cent.). With China the import trade is insignificant, and there was a decrease of 28 per cent. in the exports, which consist entirely of raw cotton. To Persia and Turkey coffee is exported; the exports fell off considerably during 1876-77. The exports to the Australian Continent consist chiefly of rice, and the principal imports are copper and horses. The imports increased by 44, and the exports decreased by 98 per cent.

As regards the interprovincial trade, the principal imports from Bengal are rice and other grains, the cotton piece-goods, cotton twist, and metals, and the principal exports cotton, seeds, hides and skins, spices, coffee, tobacco, and oils. The export trade has decreased by 4.7, and the import trade has increased by 4.50 per cent.

Bombay procures from this Presidency coffee, spices, oils, coconuts, timber, coir, and sugar, and supplies cotton piece-goods, cotton twist, and metals.

There was an increase both in the exports and imports amounting respectively to 23 and 46 per cent.

With Sindh the trade is not of great importance, but in 1876-77 the imports rose from Rupees 1,71,444 to Rupees 6,49,885. The increase is chiefly in rice. In exports the decrease was small.

Burmah usually takes oils, seeds, tobacco, and cotton piece-goods, and supplies rice and timber. In the year under review the imports and exports rose by 84 and 28 per cent. respectively.

### EXAMINATION PAPER.

#### MATRICULATION CLASS.

(Pachiepp's High School.)

#### ENGLISH POETRY.

Time—Two hours.

- I. A. 'I must be taught my duty, and by you!'  
(1). Give the meaning of this line. (2). State how the significance would change if the note of exclamation were omitted. (3). What are the two affirmations connected by *and*.  
B. 'He owes not any man.'  
Give the construction of *non*.  
C. 'Then he turn'd  
His face and pass'd—unhappy that I am.'  
Supply any words you think necessary to bring out clearly the meaning of—*unhappy that I am*.  
II. Then answer'd Mary, 'This shall never be,  
That thou shouldst take my trouble on thyself:  
And, now I think, he shall not have the boy,  
For he will teach him hardness, and to slight

His Mother; therefore thou and I will go.  
 And I will have my boy, and bring him home;  
 And I will beg of him to take thee back:  
 But if he will not take thee back again,  
 Then thou and I will live within one house,  
 And work for William's child, until he grows  
 Of age to help us."

(1). Rewrite the above lines in the indirect narrative form. (2). Is *think* used transitively? Give a reason for your answer. (3). If *shall* in line 3 be changed to *will* and *will* in line 4 to *shall*, how will the meaning be altered?

III. What are the allusions in --

(a). "Dust thou art, to dust thou'rt,"

Was not spoken of the Soul."

(b). 'Softly the Angelus sounded.'

(c). Crowed the cock, with the selfsame

Voice that in ages of old had startled the penitent Peter.

IV. What is the moral taught by 'Excelsior' and narrate the incident on which "Evangeline" is founded.

V. Explain--

(1). All the man was broken with remorse.

(2). Be not like dumb, driven cattle.

(3). The door was off the latch.

(4). Him that's gone.

(5). Let the dead, Past bury its dead.

VI. 'The man of seventy winters.'

'The maiden of seventeen summers.'

Explain of and state why *winters* is used in the case of the man and *summers* in that of the maiden? What figure of speech have we in both expressions?

### DR. CARPENTER ON EDUCATION.

(Concluded from page 238.)

In these examinations I find that this year the very large proportion of the honours have been taken by female candidates. I find that the first and second prizes in general proficiency, the first and second for English subjects, and the first and second for modern languages, and one of the mathematical prizes, have been gained by female candidates. After what I have said already, you need not wonder that I should look at this with very great interest. It is in the education of girls that this great looseness that I spoke of, and want of training of the intellect, has been principally manifested. In teaching arithmetic, for instance, they have been merely taught to work certain rules, without giving them an idea what those rules mean. That has been one of the great faults of female education. Now I know that those who have taken this matter in hand have laid special stress on improvement in the teaching, and then the improvement of the pupils will, of course, naturally follow. Therefore I rejoice to see that already there is this large increase in the number of female candidates; and that the excellence of performance is showing the fruits of this increased interest in female education. You all know, I dare say, that the University of London has been taking up this subject with the greatest interest, and if the petition

which is at present under the consideration of the Privy Council is complied with, we shall be in the position of placing female candidates exactly on the same footing with male candidates in every subject. Now, as I said just now, I am not a believer in competitive examination beyond this, that I believe that every examination is valuable as showing that a candidate possesses a certain minimum of knowledge. I do not think the very best man is always chosen by the result of an examination paper; but I feel quite certain of this, that no one who cannot answer an examination paper, or a set of examination papers, of a fair amount of difficulty, ought to be appointed to any public office of importance. The passing a good examination gives an attestation of the candidate's knowledge and capacity; and I therefore do not at all wonder, to learn, what I am sure is the case, that those who have passed these examinations with credit, who have gained high certificates, or, still better, prizes, are sought for in our houses of business, and have a much better chance, therefore, of getting on well in the world. I do not say that getting on well in the world is the highest object we should aim at; but it is one, at course, that we do aim at, and there can be no doubt whatever that the evidence of a thoroughly good school training, afforded by these examinations, is a most valuable passport to employment, and leads up to promotion in life.

But I should be sorry for you to regard the prospect of such success as your highest motive; this you should find in the satisfaction of your own minds,—the satisfaction of knowing that you have made the best use of your opportunities; that you have prepared yourself for whatever position in life circumstances may call you to, for none of us can foresee our own future; and the great thing is, have we, or have we not, made the best use of the opportunities within our reach? Have we, or have we not, qualified ourselves for making in future life the best use of whatever that future may bring? I could tell you numbers of cases in which a little bye-knowledge, so to speak, little odds and ends of information acquired in early life, have been treasured up, and made the subject of thought, so that their bearings have come to be appreciated and understood, and they have been built up into the general fabric of thought, and have turned to most marvellous account in after life; but I am afraid to detain you with such instances. "No effort is lost," was a favourite maxim of my early training; and, on the other hand, no knowledge is lost. I believe no knowledge is useless; although it may not turn to account in the individual, it turns to account in the race, and all progress is something gained, something established. It may appear to be at a stand-still for a time, but everything that is gained gives fruit at some time or other.

One other word I would say to my young friends, to whom I shall have the pleasure of distributing the prizes, and to their parents. I have spoken of the importance of these examinations. It is a part of my own knowledge, not merely what has been communicated to me, that there are a great many parents who do not think enough of these examinations and tests, and think it a needless trouble and expense to prepare and pay for them. Now I assure you, do not at all sympathize with this, because I have seen throughout my own life, devoted to education, the value of examinations. I say that even the working for an examination is itself a training of the mind. I

do not say it is the be-all and end-all; but the mere fact of the habit of attention that is fostered, the fixation of mind, and the careful study of a subject, not as a mere part of the school routine which is gone through as matter of ordinary work, but with the determination to master it, and make it part of the mind as completely as the capacity will admit—all this has a great effect on the mind of the young person who is preparing for an examination. And then there is the earnestness which it fosters; the very natural desire for distinction; the desire to pass well, which gives the zest to the pursuit; and then that which I have so often spoken of, the valuable test which it affords of that which is badly taught or badly learned. Until a youth or girl has gone through an examination, they do not know their own ignorance; that I am quite certain of. Then to the young pupils themselves I would say, do your best under all circumstances. Never be satisfied with what an artisan calls "scamping his work"—with an imperfect apprehension. Never be satisfied without a thorough knowledge that you know what you know; that it is real knowledge, and not merely something committed to memory without any reality about it, which is like undigested food; the consequence of "cramming," whether physically or mentally, as a great many of you know, being that such food is not digested. It is not assimilated as part of the organization; but lies there a burden rather than a gain.

Now to these remarks I would only add the great gratification which I experience in finding that this College is thoroughly grappling with the whole subject; that it is grappling with the actual state of teaching as shown by these examinations; that it is grappling with the problem of raising the standard of teaching in two ways: first, finding out what is bad teaching and showing the imperfections of it (and of that I have had large experience in the University of London), which is for the benefit of the schools themselves; and, secondly, it is also grappling with the other end of the problem, the teaching of teachers, which I hold to be quite as important a part of the functions of this great College as the other. This is the most powerful promoter of good teaching amongst the candidates; because every teacher who is well trained, who is well prepared for his function, is prepared for a life-work in which hundreds of candidates will be influenced by it. In the other case, we are dealing with individuals. Here we are dealing with *fact*, as it were, from which influences will radiate. Every teacher exercises his work under a great moral responsibility. It is not merely the responsibility of individual duty, but the moral effect upon the pupils, which has to be considered. I remember hearing it said of Professor Malden, of University College, who was painfully slow in his classical reading, "Yes, that is quite true; but what a grand moral lesson is conveyed by the thorough exactness with which he criticises and scrutinises every part of the author he is explaining, and by his requiring the same thorough knowledge on the part of his pupils." Of course there might be too much of that; there needs to be a balance in all things; but such moral discipline, I assure you, is to my mind quite as important as the intellectual discipline, in preparation for future life. The habit of always trying to do the best, to get the best rendering of a classical author, the most thorough knowledge of the mathematical problem, the habit of never being satisfied short of thorough

excellence, is the basis, it seems to me, of all that is best in education. —*Educational Times*.

### EDUCATIONAL DEGREES.

IN another column will be found an address, delivered at the public distribution of prizes and certificates to the successful candidates at the Christmas Examination of the College of Preceptors, by Dr. Carpenter, Registrar of the University of London. The address, which covers a great variety of topics, is well worthy the careful consideration of Teachers, as it represents the matured experience of a high authority on Education—a man who has all his life been teaching, examining, or superintending the teaching and examining of others, and who belongs to a family whose name is a representative one in the annals of educational work. It is more especially to his concluding remarks, on the granting of Educational Degrees by the Universities that we desire to draw attention, as they appear to us to open up an entirely new branch of educational reform.

In response to a suggestion from a speaker at the meeting, Dr. Carpenter gave an assurance that, if a scheme on the subject could be prepared by the College of Preceptors, and a memorial drawn up, it should be carefully considered by the Senate of the University of London. All these reforms, he went on to explain, in the direction of opening up new examinations, had been effected in the first place by a little pressure from without. The new degrees in Literature and Science of the London University had been initiated in consequence of a representation made by a large number of distinguished persons interested in those subjects; and the degree in Music, the latest innovation, took its origin in a similar manner from the first action of a body of eminent musicians. Degrees in Education, he said, should be advocated in the same way by teachers. This naturally raises the question, What form is the examination for such a degree to take? No examination hitherto devised can show that a man who *knows* can impart his knowledge. Instances are rife of cases in which most promising young men, with the highest University degrees, have been utter failures as teachers. How then are men to be examined before they receive the *imprimatur* of an Educational degree?

This is the question we propose in all seriousness to our readers, and should be glad to see discussed by Teachers. It will probably occur to many, as it did to Dr. Carpenter himself, that one mode might be, to set a candidate to give a public lesson to a class in the presence of the Examiner. But we should not ourselves attach undue importance to such a test, as its application is not without its difficulties. First, where is the class to come from? Secondly, a class gathered together for such a purpose, and conscious of it, would be of an altogether abnormal character. The pupils would be on their very best behaviour, and would probably be preternaturally quiet and attentive; and in either case, two of the most important qualifications of a teacher—the power of maintaining discipline and of interesting a class—would not be tested, or very imperfectly tested. Nor does it seem to us that much would be gained by such an experiment. In Germany, the "Trial-lesson," which at one time



formed a regular part of every Teacher's Examination, has long ago been given up; and it has never entered into the scheme of the College of Preceptors. It is a case exactly analogous to that of a lawyer. Cambridge confers the degree of Bachelor and Master of Laws. The Inns of Court admit students to the Outer Bar; but neither Cambridge nor any Inn of Court calls upon the candidate to plead a case before a Judge or Jury. They say to the world only,—"We have approved of this student; he has reached our standard of knowledge; let the world judge how far he can put that knowledge into practice. We have satisfied ourselves that he is equipped with the information without which no technical skill can be of much value; and in ascertaining this we have conferred a benefit on the public, which could not ascertain this for itself." Following out this analogy, we think that the degree of Bachelor in Arts or Science should first of all be obligatory on all candidates for the degree in Education, because the ground-work of a man's power to teach is the knowledge of what is to be taught. And if upon this; and after such an interval as now intervenes between the B.A. and M.A. degrees, papers were set on the theory, the practice, and the history of Education and educational methods—with or without a "trial-lesson"—and on mental science, physiology, and hygiene, in their application to education, Teachers would be sent forth equipped for their profession as they have never been before. The recipient of the degree would furnish by its possession *prima facie* evidence of the reading and knowledge necessary to teach—knowledge and reading, that is, not of the subjects to be taught only, but of the best methods of teaching them, of which the numerous works on the techniques of education, or attendance on such a course of lectures as those of the Training Class of the College of Preceptors, would supply abundant examples. It should be an essential pre-requisite of the examination that the candidate should furnish evidence of having been engaged for a certain prescribed period—corresponding to the *Probe-jahren* of the German system—in the practical work of education, after taking his B.A. or B.Sc. degree. The distinctive Teacher's degree (we would suggest M.E., i.e., Master or Mistress of Education) supervening upon this would then represent something more than mere theoretical knowledge. The advantages of such a degree will be obvious to all: it would at once, more than anything else, stamp its holder with public respect; it would help to give the Teacher's calling the position and dignity of one of the recognized learned professions; and it would bring under University influence and organisation a large and highly educated class numbering, according to the last census returns, over 60,000 persons, while the most numerous profession in this country, that of medicine, does not, according to the same authority, exceed 20,000. We trust, therefore, that the invitation of the Registrar of the London University will be taken up with alacrity; we invite discussion and suggestions, and we hope that Teachers will soon be in a position to go before the Senate with a memorial so strong, and a plan so clearly mapped out, that they will command the respect as well as the attention which Dr. Carpenter promises them.—*The Educational Times*.

## THE KINDERGARTEN SYSTEM.

Paper read at the Teachers' Conference, January 9th.

BY W. H. HERFORD, B.A.

SPEAKING, AS I have the honour to do, before experienced teachers, I shall not be able to help saying much that is known to them already. Froebel's system had its beginning some forty years ago, and the outlines of his plans are known everywhere. I can only hope therefore that, like Molière's "Citizen Nobleman" with his tutor in philosophy, you will permit, even desire, me to proceed as though you did not know all about it!

Friedrich Froebel, having suffered from a viciously bad education, set himself to reason out why it had been so bad. He studied children's nature; human nature as exhibited in children; assuming only that if we teachers and parents educate children according to their nature, children will be well educated! So he found that children are not naturally idle: rather, they are never still, never happy but when at work. Why then, was his surprized enquiry, are they "idle" at school? Again: they are fond of order, and discipline: most exact, and exacting with one another: perfect Martinets in any matter which they have to regulate for themselves. Why then are they disorderly at school? He judged that "school" must set them to work unfitted for them; that school must demand order and discipline on Egyptian principles, when it does not provide suitable employment. How mend this? It being clear that, like the Cornish demon, children must be always employed, or they will play the—according to their nature!—in place of trying to force Industry and Discipline by fear, try another plan. Given occupation that suits their nature, Industry and Order will come of themselves. In other words, fit work will take care of Idleness and Disorder—will painlessly extinguish both.

Next, Froebel takes the old philosophical "Latin," "Nihil in intellectu quod non prius in sensu," and puts it to a practical use. The senses act first: they are *necesse* to act first: this, the slightest observation of children tells us. It is now known, I believe, that the portions of brain first developed are those parts which serve the senses. The senses may be helped, may be guided. This help and guidance is Education. Therefore, our first education should be to set the senses to work; to exercise, employ, improve them.

Froebel insists that the first years of life, after consciousness begins, are, for education, the most important, and teaches mothers how they should make their earliest play, their cradle songs, form an atmosphere of good around their children. As to his Child-garden, he thinks the young plants may be transplanted, so as to enjoy social training, at about three years old, and from the third year to the seventh is the Kindergarten period, which is not "school"—into which even the all-important three Rs are not forced,—which is to be the preparation for School, and for Life. Having his little pupils from three upwards together, he provides them with rational toys; "gifts" as he quaintly, but aptly, calls them. The first gift is one which can be used by a mother with her one babe, as well as by the child-gardener with her little class. It consists of six woollen balls: three of the primary, three of the secondary colours; and to each, of

them a short string is attached. By handling and comparing these, the colours are learned. Next the balls are moved, rolled, swung, every act being named, and every phrase being spoken after by the little pupils, so that from the first, Enunciation and Pronunciation are cared for, in a way that being natural is not tiresome. Next, is the second gift, comprising a Sphere, Cylinder and Cube of wood, solid *Form* becomes the subject of observation. The sphere and cube for contrasts, with the cylinder to show resemblances, are handled, felt, and seen, and the little pupils gain first the impressions and ideas, and next the names of curved and flat Surface, Edges, Corners; by-and-bye, Square and Circle as flat forms. Next comes a box of eight cubes, that is, a cube divided once in every dimension. With these the children build all manner of "forms of life," as Friedrich Froebel styles them—i.e., forms, more or less like things (objects) known to the child's experience—chair, sofa, bath, &c. Then, cubes divided with increasing complexity, are used for building-up forms more and more various; in all which the child is led to invent—to do something out of itself. Thus made acquainted with solid figure, children are next brought to the conception of separate *surface* by tablets, capable of being arranged into a hundred pretty patterns; thence to the *line*, by sticks laid in numberless figures; while by pointed sticks, joined by softened peas, the idea of the *point* is given, along with shape as almost detached from substance. Then, for the cultivation of high and hand-skill directly, the taste for beauty, and the inventive faculty being more directly called out, Froebel invented paper-folding, in which from a single square is evolved a bewildering variety of forms at once beautiful and regular—fanciful and yet logical, one might say—because symmetry, the exact equality of opposites, is always observed. It is not needful to mention every separate gift, all of which prove Froebel to have possessed that instinct of genius which turns commonest things to use and beauty. Patterns are pricked into paper with needle; narrow strips of paper are woven into mats, and simple figures are coloured with the brush,—so on to drawing with pencil, and last and highest, modelling in clay. In all these "occupations"—the "work" of the Kindergarten—the rule is not to copy, but to work by suggestion,—the children are to be led, not driven. The fundamental principle is, "Do, that you may learn;" and the aim is "spontaneous, but regulated activity." To us, this "happy Nature" may seem play-work indeed. Look, however only at the children in a Kindergarten and see their happy earnestness and full purpose of soul, and doubt if you can, that they are being well trained to do their work one day, in the world, as men and women. No compulsion is allowed; no punishment is needed; but nothing is permitted to be done, otherwise than aright, according to the law of the work! And, as a rule, the small artificers perceive at once, or are taught willingly, that the right way is best, and (see, etc.) show themselves amenable to right reason.

At the same time, it will hardly need much speaking to convince teachers that they who shall thus direct, and train children; lead, and not drive; suggest, and not command;—will need to have been themselves carefully trained. There is a portion of what theologians call, I believe, "original sin," that is, of individual self-will, even in children from three years of age to seven, and it need not be doubted that pupils, even in Kindergarten, need for their management much

wisdom as well as gentleness. I have put the Kindergarten *work* first, not because most important or most original, but as being most obvious, and most practicable. The "games" have yet higher meaning, yet clearer value, and this threefold: First, as lowest, they contain carefully regulated varieties of movement, so as to be an unconscious system of true gymnastic or reasonable education of the body. Secondly, they cultivate Music. All games are accompanied by singing; so that children's lungs are exercised, and their ear for tune and time developed. But the value of singing for all children is now so generally understood, that I may pass on to the Third, use of these "games," wherein the originality of Froebel appears most conspicuously of all. The Kindergarten Games become means for the unfolding of the mental powers, and for true exercise of the moral sentiments—according to the spiritual stature of the child. Let us take an obvious example. A game is imagined—as old as the hills, indeed! in which various handicraft trades are imitated. In turn the children saw, hammer, draw ropes, mow, sow seeds, reap, thrash. Everything is done in rhythm, and with simple song accompaniment. This is all delight to the children; but it does not end in pleasure, though to make them happy is much. See what has been done, more! Various muscles have been exercised without fatigue; the sense of tune and time have been practised with delight; and that peculiarly human quality, love of imitation, has been gratified; and all has been done in *order*, according to a certain *law*. Very favourite games are those in which habits of animals are represented. A few children group themselves closely together—this is the pigeon house; the rest join hands around them—they are the pigeons. Singing together the circle widens and the little birds fly out, joyously moving their arms in the likeness of wings. At a certain word in the song, the birds return, and the house closes again. In these games we have the unconscious education of both moral and social feelings. The law of the game must be kept; any one declining to obey it, is with gentle patience put to look on. Every one wants to give way to others—each sees that the pleasure of all depends on order and fairness: the ever importunate Self is checked, without being thwarted, and they learn to take pleasure in each other's pleasure. Think how the little characters are laid open to the loving eye that only seeks to make the best of each one.

To sum up:

1. I claim for the Child-garden system the credit of being the best preparation for schools; even as they at present stand. Whatever may be the system or want of system, upon which children are educated after their seventh year, they must be the better for having been *naturally* trained up to that time. In the Kindergarten their senses have been trained; they can use their fingers deftly; they have been used to observe and examine; Knowledge has always been a pleasure to them, therefore they do not set out with any dislike for lessons and school work; their future teachers find a prepared soil in their minds, and the requirements of Discipline have also been prepared for, by habits of cheerful Obedience and Order and Neatness. Though reading and writing do not strictly belong to the Kindergarten, there is, in this country, most obvious reason for letting the transition be made under Kindergarten teachers.

No part of School (proper) probably is more difficult than the teaching to read and write, when wrongly done. The German plan of learning to Read, Write and Draw at once, is eminently Froebelian and it has been, with perfect success, applied to the English language. This plan, when properly carried out, thoroughly interests the children. It is often said that children must, at school, be taught to do what they do not like; as they will, at school, and yet more in life, be compelled to do what they do not like. Quite true; and if children, trained in Kindergarten or anywhere else, have not learned to do what they *individually*, with their lower self, would not *choose*, they have been trained to no purpose. But surely it is not necessary to find out distasteful things to do. To do, *what one enjoys*, very well, with great pains, requires self-conquest, and perhaps answers better in the end than trying to make children do what they cannot like. This training *must* make the children most ready for schools, even as they are, and we have the evidence of experienced teachers that Kindergarten children are the best grounded and prepared.

2. Being the best preparation for other schools, Kindergarten would seem to establish its right to the place which is usually conceded to it by those who view it with any favour: that it is the best "Infant School." The gifts, the games, the songs, the omission of all harshness, the entirely gentle and loving treatment, the atmosphere of happiness which pervades the true Child-garden speaks to every human heart as the true educational "milk for babes." We feel this is the system for the *poor*; for children whose lives are not so bright, and sweet, and happy, with ease, comfort, beauty, as we would have all children's lives to be. It may be doubted whether the Kingdom of Heaven will be realized upon Earth anywhere so well as by putting our gutter children into Kindergartens. But the children of the *rich* are often left to hirelings, whose own the sheep are not, and what training that is need not be specified. True Kindergarten-enthusiasts say that this training to play and work with others—social training under careful superintendence, learning bodily aptitudes, quickness of sense, skill of hand—not only preparing the intellect for all future work, practising faculties of form and number, but learning the true life-lesson, *to live together*, to yield the will, give others their share, take your place, work for the whole,—is just as good for *rich* as for *poor*.

3. Froebel's system, as thought out by himself, meant a Reform of Education *throughout*; and the Kindergarten was the first storey of the building. Had he lived, he might have arranged methods for the second seven years of life, as skillfully as he has done for the first. His great aim, as realized in the Kindergarten, the harmonious development of the whole nature in each one, is manifestly the purpose of all education, to the end of life. Some of us are endeavouring to carry out his ideas in that second period of seven years which closes childhood and ends in youth. His motto of method, "Do and you will know," or "Learn by working," may be seen to apply (if one will think) to that age, when, usually at present, from the superfluous necessity of bodily exercise, Play is turned into Work. Athletics are made idols, and every conceivable exertion of body is cultivated and desired, provided only it be not useful, provided only it do not produce anything! The natural check upon the Play-mania of the day may be found in Carpentry and Field-work which, when fairly

tried, are just as refreshing as play, and more interesting. The order of acquirement—Impressions first, then Ideas, last Words, may make some havoc in our established plans of education, whereby when there is something worthy to be known, we say "Go to, let us teach it to our children," and we swoop down upon them with Grammars and Dictionaries, Pinnock's Catechism, and books of all sorts, suited to every Standard up to the *u*; but if we do find that forcing does no good; that human plants can only grow according to law, and bear fruit in season, so that many things we now teach early will be begun late, and some now taught will be left to them later to learn—this is at once Froebel and Human Nature!

### MR. FITCH'S LECTURES ON TEACHING.

In the Fifth Lecture, the first subject discussed was that of Writing, in regard to which there was little to be said and much to be done. Most teachers discarded all theory in teaching this subject, and felt that, if they secured good copies, and insisted on careful imitation of them, nothing else was necessary. Such teachers were not far wrong. It was very possible to overlay the teaching of writing with too elaborate a system,—e.g., the method of Mulhauser, which was described, analysed the written letters into parts, to each of which a name was given; and these parts and their proportions were dealt with separately. This method encumbered the memory with needless terms and formulae, and had the disadvantage of talking too much about a mere manual act. Nevertheless, a careful grouping of those letters which contained the same elements—e.g., the *i, v, l*, and *t*; afterwards the *m, n, u, p*, and *h*; then *a, d, e, o*; then *g, q, j*, and *y*; and finally *x, v, w*, and *b*—would enable the teacher to confront the difficulties of beginners, *one by one*, and, by illustration on the black-board, to point out the right proportion of the letters and their several parts. A well-conducted writing lesson was an exercise in elementary drawing; it was good training in accuracy of eye, in steadiness and flexibility of hand, in obedience, and in cleanliness. Some rules were given whereby, in the right supervision of a writing lesson, all these objects might be attained. Much stress was laid upon the constant use of large-hand, and the clear and accurate formation of every single letter. Children would form for themselves, after leaving school, a characteristic and expressive small-hand, if and only if, they were first taught to form each letter well; but it was a mistake to be in too great a hurry to attain the accomplishment of "running hand."—On the subject of Arithmetic, the lecturer advised that a few simple exercises in counting should be given before written notation was attempted. The number of panes of glass in the window, of children in a class, of books or pens in a heap, of letters in a word, or words in a line of print, should be counted, and little additions and subtractions made with these visible objects, so as to secure a certain familiarity with numbers up to 50. Then comes the right use of figures and of written notation. Two principles had to be explained to young children—(1) The decimal character of our whole system; (2) The device by which the value of numbers was represented by their place, this last being closely connected with the right use of the 0. Various diagrams were shown, illustrating the way in which these two

main principles could be rendered thoroughly intelligible to little children. And, in connection with these early exercises, it was urged that at first there should be no reference to millions and large numbers until great facility had been acquired in dealing with hundreds. If the principles of our notation were thoroughly understood in their application to numbers up to six or seven thousand, an extension of the same principle to larger numbers afterwards would be very easy. A mistake often made by some of the best and most sympathetic teachers was to dwell upon these elementary lessons a little too long. It was well to use concrete numbers, to talk of nuts and marbles, and to employ pictorial devices, ruled columns for hundreds and thousands, &c., so long as these expedients served a useful purpose, but no longer. The moment children were far enough advanced to see the meaning of our system of notation, and to recognise abstract numbers as separate objects of thought, they should be encouraged to go forward, and to dispense with the complex machinery applicable to beginners only. It was a true rule of action here, as in all departments of teaching: let your lesson always begin with something within the sphere of a learner's present knowledge and experience; but never let a single lesson end without doing something which definitely enlarges that sphere. It was shown that what is often somewhat erroneously called mental arithmetic, or that kind of computation in which the processes are unwritten, had been somewhat discredited among the higher class of teachers, owing to the use which had often been made of it for purposes of display in elementary schools. There were certain well-known rules for finding the price of a dozen or a score of articles, for calculating interest at 5 per cent., for squaring a number, and for finding the price of ounces when the price of a pound was known; and these rules were all based upon some accidental analogy or fitness of the figures for easy computation. But they were not necessarily very useful in the business of life; and the effort to remember a number of such rules, and to fit new problems into them, was rather calculated to narrow the intelligence and to hinder the attainment of mental flexibility and skill in dealing with the miscellaneous arithmetical combinations of actual business. In discarding many of the so-called systems of mental arithmetic, as somewhat unreal and pretensions in their character, many teachers who had abandoned the whole subject were not wholly without justification. But there was a sort of oral questioning and answering in arithmetic which had great value, as an instrument both for quickening the intelligence and for securing the greater accuracy of written work. And this kind of mental arithmetic consisted of short sums, such as involved only one or two efforts of thought, in connection with all the rules. Illustrations were then given of the kind of oral practice which children should have in addition, in subtraction, in division, in money, in fractions, and in proportion, before they were asked to work out written problems in any of these rules. Since the accuracy of the whole result in a long sum depended on the way in which the separate mental efforts were performed, greater attention should be paid than was common in schools to those exercises which were calculated to secure correctness and promptitude in arriving at simple results by means of those efforts.

The Sixth Lecture was occupied in the discussion of methods of

teaching Arithmetic. Two distinct objects ought to be kept in view by the teacher of this subject:—(1) The practical use to be made of it in the business of life; and (2) Its incidental and disciplinary value as a means of strengthening the reasoning power of the learner. From the former point of view, arithmetic, as the art of computation, was of unquestionable service, and of far-reaching application to other branches of knowledge. From the latter, it should be regarded as a branch of mathematical science, which, if properly investigated, was capable of doing for the mind of a child at school the same kind of intellectual service which was performed by geometry, conics, and the calculus in the case of a student at the university. Even with regard to the art of computation, it was desirable to arrive at the various rules by a process of inductive inquiry, from examples worked on the black-board in the presence of the class, rather than to require the rules to be learned by heart and obeyed before they were understood. Some examples were given of this process of investigation. The importance of strict discipline, and of arrangements by which copying should be rendered impossible, were next insisted on. The habit of relying on the accuracy of his own work should be formed by the pupil. It was desirable also that a good many exercises should be given out in words rather than in figures; that these exercises should be irregular in form, short, and numerous, rather than confined to the long ponderous sums often found in books; and that many of these should be given without any hint as to the rule or heading under which they should be placed. The habit of working a large number of exercises in groups, arranged under particular rules, did not alone suffice, however well graduated such rules were, to give the scholar the needful practice in asking himself by what process a given problem ought to be solved. The importance of visible and tangible illustrations of fractions, and especially of an early initiation of the pupil into the nature of fractional arithmetic, were next illustrated. The teaching of fractions should certainly precede proportion. As to weights and measures, it was desirable to learn by heart only those which were in actual and familiar use, such as avoirdupois weight, long measure, and the constituent parts of an acre and a gallon. But apothecary's weight, cloth measure, and ale and beer measures were virtually obsolete, and though they might be retained with advantage in the books, for reference when problems had to be solved, were not important enough to be held in the memory. Arithmetic was the one subject in the school course which was best fitted to encourage accuracy as a mental habit, and pains should therefore be taken to insist on minute accuracy in answers, even down to the remainders and those parts of the solution which were not for practical purposes very significant. Special exercises also in rapid counting were very desirable, not only as means of securing a more exact result, but also as helps to fixed and concentrated attention. In dealing with arithmetic as a science, the lecturer showed, by a number of examples, how the art of demonstrating a principle and tracing it out carefully to its applications gave to the mind of the pupil the same sort of logical exercise which was obtainable in higher departments of mathematics. The examples selected were—(1) The formation of a system of notation on some other than the decimal scale; (2) The properties of the number 9; (3) The origin and structure of the French metrical system; and

(4) The rule for division of fractions. But it was contended that in every part of arithmetic the same method of referring rules to axioms, postulates, and first principles ought to be adopted, and that by this method the study of arithmetic might become not only more rational, but also far more interesting.

The Seventh Lecture was devoted to the consideration of the study of Language. The reasons which had in all ages led men to give a high place to linguistic training as part of a liberal education, were shown to be well founded. For words are not merely symbols of thoughts and facts; they are the instruments with which we think. Hence whatever enlarges the range of words at our disposal increases our mental resources; whatever gives precision to our use of words is a help to accurate thinking; verbal ambiguities lead to mental confusion; and a knowledge of the structure, history, and correlation of words is a key not only to the understanding of the things represented by those words but also to the intellectual history of our race. In practice, as was well known, this general and very true belief had found its expression in this country in the form of a strong preference for the study of the Latin and Greek languages as the staple of a University and Public School education. And, at the time of Elizabeth, when the great grammar schools were being founded, those languages had a good right to claim supremacy over all other forms of learning. All the best books then in possession of scholars were written in those languages. Latin was the common medium of communication between learned men, the language in which, *e.g.* More wrote his "Utopia," and in which Bacon and Hobbes, and afterwards Milton and Newton, published books which were addressed to the scholars of Europe. Moreover, the grammar of these languages had been formulated with scientific precision, while the grammar of the modern tongues had not been reduced to a system. These reasons for studying Latin and Greek, though still weighty, were relatively less valid in our day than 300 years ago. For many new and fruitful studies, and much precious literature, had been added to our resources since; and the grammars of modern languages had been critically investigated, and thus made available to furnish intellectual discipline, the same in kind though not the same in degree, as the grammars of the older and more fully inflected languages. Yet it was desirable that Latin at least should be retained in our schools:—(1) As the best instrument for calling attention to the philosophy and structure of grammar generally. (2) As a means of giving instruction in the formation, affinities, and history of our own language. (3) As an introduction to one or two books at least in the Latin language, which may be chosen as fair representations of Roman history, or Roman modes of thought. (4) As a means of explaining much that would otherwise be unintelligible in English literature, and of shewing the kind of debt which that literature owes to ancient writers. To this extent, and chiefly for the purpose of contrast and comparison with the forms of our own language, Latin might be properly begun early, say at ten years old, in schools for girls and boys alike, and taught *pari passu* with English. Greek he would not attempt in the case of scholars not likely to stay at school beyond 17, or to proceed to the University; for otherwise the fragment of it which could be taught would be somewhat pretentious, and would bear no real intellectual fruit. The same remark

would apply to versification, and to a good many of the exercises to which so much time was devoted in Latin composition. Some suggestions were then made as to the manner in which the Latin grammar and vocabulary might be so taught as to have a useful reflex action on the study of English. Modern foreign languages might, though in a lesser degree than Latin, serve as means of philological discipline; but the first and best reason for teaching these was that they might be spoken and used. Hence the necessity for constant conversation and oral questioning in addition to written lessons. Various forms of exercise were discussed having this object in view. Dictation in French or German was particularly important, with a view to secure accuracy in grammar and also to familiarize the ear with the sounds of the language. But this was not enough. The slow measured utterance proper to a dictation lesson was not like ordinary speech; hence it was important that much practice should be given in what might be called "audition," the listening to sentences and narratives read or spoken at the ordinary rate of a good talker. As to the English language, it was shown that those grammars were founded on a wrong principle, which treated it in the same way as a foreign language and discussed in succession orthography, etymology, syntax, and prosody; as if vowels and consonants were to be first discussed, then words, and then sentences. For in truth, children had learned sentences already, before they came to the grammar. More than this, they were already familiar with English as a vehicle of thought; and hence that which in French or Latin was the ultimate goal of all teaching—the power to think in the language and use it freely—was the point of departure in the case of our vernacular tongue. To a child an English sentence was easier than a word, a word easier of separate cognition than a syllable, and every syllable had more meaning to him than the separate power of a letter or an elementary sound. To him, therefore, the synthesis usually adopted in school books was inappropriate. All investigations into the grammar of English should proceed downwards from the analysis of sentences. In short, as Herder had justly said, while we learn a foreign language by means of its grammar, we must learn a vernacular grammar in and through the language.

The subject of teaching Language was resumed in the Lecture of November 22, and attention was first called to the way in which the classification of the parts of speech in English might be founded on the logical analysis of a sentence. It was important that children should first be made familiar with the distinction, between subject and predicate, the noun and the verb; afterwards with the adjective or attributive to the subject, then with the adverb or attributive to the predicate, and next with the two classes of words signifying relations only,—the connectives by which nouns were joined to sentences (the prepositions) and the connectives by which sentences were joined with each other (the conjunctions). These were the only necessary ingredients in a language. The pronoun was useful, but was not logically a new element, only a word for convenience; the article was but an adjective used in a special and limited sense; and as to the interjection, it was outside the region of grammar altogether. By vry

simple induction from numerous examples, the distinction between the uses of these various classes of words might be pointed out in this order, and then, but not till then, the technical names might be given. It was important that grammatical distinctions should not be confounded with those which were purely logical; nevertheless there was great advantage in teaching logical analysis concurrently with grammatical parsing, and showing how far distinctions of meaning and relation were recognized in the inflections of our language. The last method of laying out an exercise in analysis was then discussed; the chief objection to the ordinary method being that it did not shew sufficiently the precise relation of each subordinate sentence to the rest, nor discriminate with sufficient care those phrases which had an adverbial meaning from those which were equivalent to adjectives. In regard to teaching the meanings of words, it was shewn that since most words differed much in the significance they bore according to the particular position in which they stood with regard to the context, it was very undesirable to cause meanings of isolated words, such as some given in dictionaries, to be committed to memory by young children. A more efficient and safer way was to require paraphrases of short sentences; and the invention or discovery of other sentences containing the same words, or expressing similar meaning. Some suggestions were then made as to the right choice of passages for paraphrase in advanced classes. The conditions which should be fulfilled by a good paraphrase were:—(1) That the passage should first be read and understood as a whole, and turned over in the mind; not paraphrased piece-meal, with an effort to give an equivalent for each word. (2) That the paraphrase should contain the full meaning of the original. (3) That expletives and adjectives should be economized, and that sentences should generally be short. (4) That no attempt should be made to transmute poetry into prose, or to eliminate the metaphors; but that the figurative character of a poetical passage should be preserved. Some examples were given of the way in which extracts from our great writers might be treated as useful exercises in paraphrase. As a subsidiary exercise in English, that of verbal analysis was strongly recommended, both for its interesting and awakening character, and for the help it gave in perceiving the meaning of words and the law of their derivation. Children, *e.g.*, who were invited to form groups of words ending in *ness*, or *ful*, or *fy*, *ble*, or *like*, could discover, by an easy induction, the common element of meaning in such words, and would then be able to tell, by simple inspection, in the case of a vast number of words, whether they were English or Latin in their origin, and from what class of words they had been derived. Tracing the history of a word, so as to shew its origin and the changes of meaning it had undergone, was also an exercise full of value and interest; but great care was needed in teaching etymologies of Latinized words to scholars who were not learning Latin. The mere knowledge that *conscience* comes from *scire*, that *peripeteia* comes from *peripeteia*, and *resolution* from *solvo*, if these roots are learned by heart without further explanation, is very misleading as to the actual present meaning of the derived word, and has a rather unsound and pretentious air about it. But if

the teacher will carefully shew how the present meaning has grown out of the root, the exercise may prove very fruitful. Particular care should be taken in explaining the Latin prefixes, *ex*, *per*, *in*, *trans*, &c., and it should be borne in mind that every one of these words had two meanings—a physical and literal meaning which pertained to it as a preposition, and a derived and more or less metaphorical meaning which had an adverbial force when it was connected with a verb. There was always a connexion between these two uses of the prefix, and it was essential that the pupil should be led to see which of the two was employed. To say, for example, that the *per* in *perish* meant *through*, or that the *e* in *eloquence* meant *out*, did more harm than good. Attention was further called to the very large number of words, especially those of Latin origin, which were figurative in their use, and to the way in which the connexion between the literal and the metaphorical meanings of words might be elucidated. Finally, the Lecturer discussed the use which should be made of lessons in English Literature, and the way in which the masterpieces of our language should be investigated. A play of Shakespeare or an essay of Bacon should be so read as—(1) To understand its scope and meaning as a whole. (2) To trace to their origin all unfamiliar, archaic or characteristic words. (3) To hunt out all historical and other allusions. (4) To find the circumstances in which the book was written, and the place it occupied in the literature of the period to which it belongs. (5) To select from it a few characteristic passages for analysis, for paraphrase, and for learning by heart; and (6) To form some estimate of its merits as a work of literary art. It was the complaint of some that all this minute examination and study, especially for purposes of examination, tended to deaden a learner's interest and to diminish his enjoyment of literature itself. But if this effect were produced by teaching, that only proved that the teaching was bad and unskillful. A very striking passage was then read from one of Dr. Arnold's letters, in which he spoke of his delight in teaching Homer and Virgil, and of the treat it would be to read Shakespeare with a class of young Greeks in the same way, dwelling on him line by line, and getting all his pictures and images leisurely into the mind by the process of construing and translation. That process was certainly not unfavourable to the true literary enjoyment of a Greek or Latin book, and the analogous process of philological and logical analysis ought not to be unfavourable to the thorough enjoyment of an English Classic. It was quite a mistake to suppose that the mere historical and verbal criticism which is given in text-books was the only thing which would "tell" in an examination. Every examiner who understood his business was glad to welcome any evidence given by a candidate of fresh thought, or genuine sympathy with the book he had read; and was unwilling to assign much credit to the mere reproduction of details or secondhand critical judgments from a manual or a note-book. It might be safely said that the training which was best calculated to give a true understanding and appreciation of a great book considered as a whole, would also be found to serve best the second and altogether subordinate purpose of enabling a scholar to pass an examination with credit. Let them take care of the first object, and the second might well be left to take care of itself. After all, the true

test of success in teaching English literature was the degree in which a genuine appetite for thoughtful reading was cultivated by it. Did the lessons lead the scholars to wish to read the whole of a poem of which the extract chosen for analysis formed a part? Did the scholars, after reading a passage from Burke or Dryden, go voluntarily to the library to hunt up other works by the same author? Was the effect of the lessons to give to the scholars a heightened interest in the nobler forms of literature, and an increasing distaste for whatever was poor, or vulgar, or sensational in books? Unless the answer to these questions was satisfactory, the subject had been badly taught, and all the apparatus of paraphrase, of philology, of grammatical and logical analysis, had failed to fulfil its true purpose. —*Educational Times.*

### CURRENT MISTAKES IN TEACHING ENGLISH GRAMMAR.

(Concluded from page 224.)

Dr. Abbott, in his "How to Parse," echoes Mr. Bain's statement. He says,—"Every verb has a certain mode or mood for expressing condition. This mood is called the subjoined or Subjunctive." But Dr. Abbott goes farther than Mr. Bain. The latter seems to be under the hallucination that the Subjunctive regularly follows *si* in Latin. On that point one must simply refer him to his Latin grammar. Still he allows that clauses in which *if* or *though* is followed by the Indicative mood are *conditional* clauses; though he evidently thinks that it is the proper function of the Subjunctive to express conditionality, and that it might be rightly used in all cases, only we have found out that we can manage to get on without it, and so content ourselves with the Indicative. But Dr. Abbott is too good a scholar not to know that the Indicative is as common as possible after *si* in Latin, just as it is after *wenn* in German and *if* in English. Nevertheless he stands to it that "every verb has a certain mood for expressing condition, called the subjoined or Subjunctive." "Yes, but the facts are against you; a palpable Indicative is often found in conditional clauses." "So much the worse for the facts. The clauses are not conditional." There is a sort of cheerful courage about this way of going to work which is quite refreshing. "*If*," says Dr. Abbott, "is sometimes used not in its ordinary conditional sense, nor, on the other hand, exactly like *since*, but rather in the sense of 'assuming as a fact.' In such cases it is followed by a true Indicative, as, 'If he says that, he is more ignorant than I supposed.' This must not be confounded with the true Subjunctive."

Here at last we come to close quarters. I reply that to assume some thing as a fact before making some other assertion, is to make a conditional assertion. When I say, "The man deserves to be hanged," I make an absolute, unconditioned assertion. When I say, "If the man is guilty, he deserves to be hanged," it is incomprehensible to me how anyone can deny that I make a *conditional* assertion—an assertion *under conditions*, depending for its truth upon something else about which I am uncertain. I assert that the man deserves to be hanged *only on the assumption* that he is guilty; and if the clause expressing this assumption, which is the condition of my making the assertion in the main clause, is not a *conditional*

clause, the word *conditional* must be derived, not from *condition*, but from some other word with which I am unacquainted. The fact is, it is entirely erroneous to suppose that conditionality and the subjunctive mood are essentially connected. Conditional assertions may be made with equal propriety with the use of each mood according to circumstances. The difference depends upon a point which Professor Bain appears to me not to see at all, but which I fancy Dr. Abbott had in his mind, though unconsciously, in making the statements that I am criticising. It is this. The old talk about *mood* expressing the mode or manner of an action is all rubbish. When I say, "John, shut the door," what in the world has the Imperative mood got to do with the "*manner of the action*?" Every proposition in every finite mood, Indicative, Subjunctive, and Imperative, involves the connection in our minds of a predicative idea with that denoted by the subject. The mood expresses the *attitude of our minds in relation to this predicative connection*. When, in making it, we have in our mind the idea that the connection established relates, actually or possibly, either as assertion or as hypothesis, to something *actual*, outside our thought about it, we use the Indicative. When we express our *will* that the connection made in thought should be realised in the actual or objective world, we use the Imperative. But when the predication remains a mere *matter of conception*, without being contemplated (so far, at least, as the purpose in hand is concerned) as corresponding, actually or possibly, to what exists outside our thought, we use the Subjunctive; we thus get the Indicative as the mood of reality, or of objective predication; the Subjunctive as the mood of conception, or of merely subjective predication; and the Imperative as the mood of volitional predication.

We have now got a definition which is free from the shackles imposed on us by the words "subjunctive" and "conditional," and shall be able to see how, amongst others, conditional sentences are related to the Indicative and the Subjunctive respectively. "*Nisi hoc est, frustra laboramus.*" "If this *is not* the case (actually and really), we are troubling ourselves to no purpose." Here, in both clauses, we are dealing with external realities. "*Tu si hic sis, aliter sentias.*" "If you were in my position, you would think differently;" obviously a mere matter of conception. "I do not set before myself, as an alternative, that you either will or will not be in my position; and this, please to observe, is not the same thing as *dealing* that you either will or will not be in my position. Only I do not go so far as to contemplate either alternative in its actuality. The matter goes no further than being matter of conception. Accordingly the Subjunctive Mood is employed. Again, "*Si epistolam ad eum scripseris, ad te rescribere eum oportuit.*" "If you (actually) wrote to him, it was his duty to write back to you" (Indicative). But "*Si scissem in quo periculo esset, statim ad te advenissem.*" "If I had known in what danger you were, I would have flown to you." A mere matter of conception. I *did not* know, and *did not* fly to you. Now, too, we see how absurd the name *Subjunctive* is. The mood thus called is as appropriate in the *main* clause as in a subjoined clause, provided the predication has the merely *conceptive* character that I referred to. It would require a special lecture to discuss this subject at full length. I shall not attempt that task now. I will simply say that you will find the explanation of constructions in which the subjunc-



tive appears wonderfully simplified by carrying the question at once to the fundamental conception denoted by the *class of forms* that bears this unfortunate name. Thus, for example, this primary characteristic of the mood shows why it is the proper one in Latin and English to express *purpose*. A purpose, as such, cannot possibly be anything more than a conception. The Romans also used this mood to denote *consequence*, even in cases where in Greek, German, or English we should have the Indicative. They took simply a *conceptive* view of the relation of cause and effect, just as in English instead of saying, "He was so furnished that he gnawed his boots," we may stop short of *asserting* the actual fact by saying, "He was so furnished as to gnaw his boots," where, you will observe, the *form* of the expression gives merely a *conception* relation between the ideas, just as is the case in "He was too grieved to speak." I have not time to pursue the matter in detail, but you will find that most of the difficulties in the use of the Subjunctive in Latin vanish when we get rid of the effete old notion of its being *governed* by conjunctions or relatives, or being the mood for expressing condition and deal with it on its own proper footing, as the mood of merely *conceptive* predication. To take a single illustration. Most beginners are puzzled to tell when to use an Indicative mood after *quod* or *quasi* (meaning "because"), and when the Subjunctive. The principle is simple. If the writer is alleging what he regards as an *actual* reason, use the Indicative. If the reason is not avouched by him as matter of fact, but brought forward only as matter of conception, use the Subjunctive. Here is a sentence that illustrates both uses. "Successus ei magis quod me consilio sui certiorum non fecerat, quam quod consilium ipsum inuisset." "I blamed him more because he did not inform me of his design (real reason - Indicative) than because he formed the design itself (imaginary -- because rejected -- reason, Subjunctive)."

The view that I have just set before you in outline is nothing new or strange. It is enforced by all the best German grammarians. You will find it in Mølvig's or Roby's, or the Public Schools' Latin Grammar, in Matzner's "Englische Grammatik," and elsewhere.

I must somehow have failed to make myself understood, if I have not carried your judgment with me as to these points. -- 1. That the verb in a subjoined clause is not, as a matter of course, in the Subjunctive mood; while, on the other hand, a Subjunctive mood may be found in the main clause of a sentence. 2. That we may speak about that of which we are uncertain by means of the Indicative mood ("If he is afflicte," "If the prisoner is guilty," "Si hoc est," &c.) 3. That we may use the Subjunctive when we are speaking of that of which we are quite certain (Si scissem in quo periculis esset ad te advolassem -- there is not the slightest doubt that I did not know, and did not fly). 4. That the Subjunctive mood is not essential for the expression of a condition, and that therefore *conditional* is a bad name for it. The fact is that *certain* and *uncertain*, *absolute* and *conditional*, have been confounded with *actual* and *conceptive*. I recommend you to examine in the light of these ideas, the deliverances of some of our common grammars on the functions of the Subjunctive mood. If you find them definite, full, satisfactory, or philosophical, all I can say is that you

show a remarkable aptitude for being thankful for small mercies. Be pleased also to bear in mind that I have not attempted to deal with more than the broad outlines of the subject, and that I have not had time to show how the view I have given you of the *fundamental* functions of the Subjunctive mood is not invalidated by the fact that anomalies have been introduced by two opposing tendencies. On the one hand there is a very natural tendency to speak of contingent or uncertain *future* events as though they were merely matters of subjective conception, so that in English we say (or rather used to say), "If it rain to-morrow," "If he come in time," (where a Latin writer would have used the future indicative) -- and even to extend the usage to what is merely *present*, a tendency which must not be confounded with that strictly proper use of the Subjunctive, when the supposition we are making is not a possible *individual* fact, but as a *general* case. On the other hand there is a tendency to discard fine grammatical distinctions, and use the Indicative mood where the Subjunctive would be more correct. Now-a-days one often has the skin taken off one's ears by hearing such sentences as "If he was wise," instead of "If he were wise." But an Indicative so used is not an Indicative-Subjunctive, but merely an Indicative used where a Subjunctive ought to have been used. It is not a "false Subjunctive," because, although subjoined, it does not pretend to be a Subjunctive at all, but simply intrudes its honest Indicative face where it has no business.

There is something to be said for those who would use the name Conjunctive instead of Subjunctive. From the very nature of their primary function, those forms which are called "subjunctive" are incapable of being used in a *simple* declarative or interrogative sentence. A predication made in thought only is meaningless, except as related in thought to some other predication. It follows that, if we except optative sentences, which may be treated either as expressing volitional predication, or as being elliptical, subjunctive forms can only be used in *complex sentences*, that is, in sentences where there are more than one clause joined together. But there still remains the objection that the name is misleading, because conjoined clauses may have their verbs in the Indicative Mood.

This brings me to a point which I would gladly have discussed at greater length. I maintain that the Subjunctive has not disappeared so thoroughly as some suppose. The obliteration of distinguishing marks is not quite the same thing as the annihilation of the difference which the marks once denoted. Identity of form is not identity of function. There are those who say that in such a sentence as "If I had a shilling, I would give it to you," *had* is in the Indicative mood, because it is the same in form as in "I had a long walk yesterday," who yet have no hesitation, when parsing "I went," in saying that *went* is in the singular number, and in parsing "*we went*," that it is in the plural; and speak of some nouns being in the nominative and others in the objective case, though they are alike in form. You do not say that *regnum*, in Latin, has lost two of its cases, because the nom., acc., and voc. are alike. And this is right, because the distinctions are maintained elsewhere. So in English. So long as we distinguish "If I was" and "If I were," we are entitled to treat *had* in "If I had" as being sometimes in the Indicative and sometimes in the Subjunctive.



I know very well that to secure accuracy and clearness in what is learnt costs a good deal of trouble, and takes a good deal of time; but it does not consume one quarter of the time that is wasted over the profitless slip-slop work that often occupies school-hours. There is no real difficulty if teachers will only go on slowly. But the average boy can take in very little at a time of what requires accurate thought. If you hurry him, his mind becomes a chaos of muddle and confusion. I have known teachers take a class of beginners, and set them to learn the definitions of all the parts of speech for a single lesson. Naturally when they brought it up they were apt to say that prepositions denoted the qualities of nouns, and that verbs denoted anything that had a real independent existence, and so on. Pupils taught in this fashion may be kept at grammar for six years, and will know little more at the end of the time than they did at the beginning. But let each step be made sure before the next is taken; let the pupils, if necessary, spend a month in learning what a noun is, a month in mastering gender, another over number, and another over case, and let them go through all the parts of speech at the same rate. In two years they will be masters of the essentials of English grammar, and have more to show for the labour expended than vast numbers ever acquire in the whole of their school course.

Let me make one other practical suggestion on a point of detail. When you ask questions, always insist upon it that the answer shall be a complete sentence, and in grammatical sequence to the question. For instance, if the question be "What is the objective case?" do not allow such an answer as "Transitive verbs and prepositions govern the objective case;" but require the answer to be "The objective case is the case in which a noun or pronoun is put when it is governed by a transitive verb or a preposition;" and so on.

Now I am quite unaware whether in any of my remarks I have been treading on anybody's grammatical corns. If, however, any one present has an uneasy misgiving that, through going on without due heed in a certain rut, he has inadvertently suffered his pupils to waste their time in learning what is wrong, I can only wish him a fit of deep penitence, while I remind him of the words of a little "moral song" which he probably learnt when he was a small boy:

"Tis not enough to say  
We're sorry and repent,  
And still go on from day to day,  
Just as we always went."

#### CORRESPONDENCE.

TO THE EDITOR, MADRAS JOURNAL OF EDUCATION.

English Hexameter Verse.

DEAR SIR.—In your notes on Longfellow's *Evangeline* in the Journal Supplement, you incline to the general opinion that the Hexameter is altogether unfitted for English verse, and you quote good names on your side. May I quote the opinion of a great writer who thought otherwise? I mean the late Lord Lytton. He says:—

"Certainly I do not share in the objections which some critics of no mean rank have made to the adaptation of these measures to modern languages in which it is impossible to preserve the laws of quantity that associations derived from the originals are said, I think erroneously, to demand. For certain kinds of poetry, the hexameter especially seems to me admirably suited when in the hands of a master. The time has not, perhaps, yet come to decide the dispute whether *Evangeline* would have gained or lost in beauty had it been composed in a different measure, but most men of taste who have read the *Herman and Dorothea* of Goethe will allow, that in any other metre the poem could scarcely have had the same patriarchal charm, and no man of taste who has read the noble translation of that poem by Dr. Whewell will venture to assert that in any other metre the spirit of the original could have been as faithfully preserved."

"I am, Dear Sir,

Yours faithfully,

PRISCIAN.

#### LOCKE ON THE CONDUCT OF THE UNDERSTANDING.

THE origin of this Essay has been often noticed. The friends who meet in Locke's rooms to discuss a speculative question are puzzled by the difficulties rising round it. Locke perceived that there was something before the question itself calling for solution; "and that before we set ourselves upon inquiries of that nature, it was necessary to examine our own abilities, and see what objects our understandings were or were not fitted to deal with." Locke, therefore, was led to ask the question which the results of Hume forced in upon Kant's dogmatic slumber. He does not intend, he explains at the commencement of the Essay, to "meddle with the physical consideration of the mind," or inquire how we "come to have any sensation by our organs, or any ideas in the understanding." He thought, on the contrary, that the "first step towards satisfying several inquiries the mind of man was apt to run into, was to take a survey of our own understandings, examine our own powers, and see to what things they were adapted."

With the execution of this original design we are not now concerned. The inconsistencies in Locke's doctrine of truth and reality have been often pointed out. His conception of truth as consisting in the agreement or disagreement of ideas, with his distinction of the real and nominal essence, led him into the paradoxical assertion that mathematical and moral truths were real, precisely because they were ideal; while, on the other hand, the truths of natural substances, in so far as we never knew anything but their nominal essence, were never real; so that a science of nature was in consequence impossible. His empirical derivation of space, time, and substance has been often proved inconclusive. His account of the origin of intelligence is not without its ambiguities and inconsistencies; and the latest editor of Hume made a not unwarrantable *reductio ad absurdum* of Locke's theory when he described it as "having an idea of an idea of an idea of sensation."\*

But whatever be the opinion entertained about the theory which Locke introduced in explanation of the origin of our "ideas," there

\* Green's Hume, i. 2.

can be no two opinions about the importance of that examination of innate ideas with which Locke started. He did good service in destroying the crude theory of ready-made *a priori* principles of knowledge. His Essay is, in the highest sense of the term, an "epoch-making" work. The sound of Locke's critique has gone forth into all lands. He commanded to philosophical inquiry a progressive movement of which we have not ceased to reap the benefits. He withdrew men's minds from the empty abstractions and fantastic notions with which they were surrounded. He rightly described the innate theory as "a short and easy way" which "eased the lazy from the pains of search, and stopped the inquiry of the doubtful." And he drew from his critique that which Hegel has called "the great lesson of empiricism - that man must see for himself and feel that he is present in those facts of knowledge, which he has to accept." "The greatest reverence," so does Locke conclude the first book of the Essay, "is due to truth; and I hope it will not be thought arrogance to say, that perhaps we should make greater progress in the discovery of rational and contemplative knowledge if we sought it in the fountain, in the consideration of things themselves; and made use rather of our own thoughts than other men's to find it. For I think we may as rationally hope to see with other men's eyes as to know by other men's understandings."†

It is this "search for truth in the consideration of things themselves" which forms the counterpart of that critical standpoint which we have called the basis of Locke's character. He was doing for mental science what Sydenham had done for medicine. He was basing truth upon a "physiology of the understanding," as Kant has called the Essay; just as Sydenham was basing his medicine upon "as genuine and natural a description of diseases as can be procured." Experimental observation was the method applied in the one case to body, in the other case to mind. Both Locke and Sydenham "pointed out a way and themselves walked in it; they taught a method and used it, rather than announced a system or discovery; they collected and arranged their *visa* before settling their *capite*."‡ No writer either before or after has expressed a greater enthusiasm for truth than Locke. It is enough to quote two or three of these passages in which we hear expressed his passionate devotion to it. "Our first and great duty," he writes in his fragment "On Study," "is to bring to our studies and our inquiries after knowledge a mind covetous of truth; that seeks after nothing else, and after that impartially, and embraces it, how poor, how contemptible, how unfashionable soever it seem."§. To the same effect does he describe himself in a letter to Limborch as one "seeking everywhere for truth, and embracing it equally, as far as he is able, whether it be found among the orthodox or heretic."|| And in a letter to Molyneux asking that thinking Irishman to supply him with some suggestions for the second edition of the Essay, "I flatter myself," he says, "that I am so sincere a lover for truth that it is very indifferent to me so I am possessed of it, whether it be my own or any other's discovery."

Locke's short treatise "On the Conduct of the Understanding" will long remain a standard manual for mental cultivation. It would be difficult to find anywhere finer sayings on the tendency to mistake a partial for complete knowledge, to introduce our own peculiar notions into facts, to read the truths of the world in the light of that small sphere of science with which we ourselves happen to be acquainted. No writer has insisted more strongly on the need of indifference and impartiality to truth, of intermediate principles by which we may gradually rise to higher truths, of translating words and ideas into things, and not supposing that "names in books signify real entities in nature till they can frame clear and distinct ideas of these entities." A few sentences, with true Baconian ring, deserve extraction:—

"Let not men think there is no truth but in the sciences that they study, or the books that they read."

"To be indifferent which of two opinions is true is the right temper of the mind that preserves it from being imposed on, and disposes it to examine with that indifference till it has done its best to find the truth, and this is the only direct and safe way to it. But to be indifferent whether we embrace falsehood or truth, or no, is the great road to error."

"Let a man be given up to the contemplation of one sort of knowledge, and that will become everything. An alchemist shall reduce divinity to the maxims of his laboratory, explain morality by sal, sulphur, and mercury, and allegorise the Scripture itself and the sacred mysteries thereof into the philosopher's stone."†

How often would controversies be sweetened were people to remember that "Distinction and Division are very different things;" and that "one of them is the most necessary and conducive to true knowledge that can be; the other, when made too much use of, serves only to puzzle and confound the understanding." Locke's words are the germ of that wise aphorism of Coleridge: "It is a dull and obtuse mind that must divide in order to distinguish; but it is a still worse that distinguishes in order to divide." And if we cast our eyes back over time, it is the same spirit as that which led Anaxagoras to say, "Things in this one connected world are not cut off from one another as if with a hatchet."

Locke's Treatises will always be an education\* for the human race. The "Essay concerning Human Understanding" will always remain a standard text-book on philosophy. But it must be read as Locke's own method requires it to be read. To follow slavishly its doctrines is not only to seek the living among the dead—it is to be false to that attitude of criticism which is the chief lesson that Locke teaches. But further, this criticism must be historical in basis. Locke belongs to the seventeenth century; and to criticise him through the categories of the nineteenth is to ignore his true significance in speculation. Nor is it to Locke only that this method of historical criticism must be applied. That historical attitude which Herder laid the foundation of, and which later German philosophy carried out, must be more and more recognized as an element in true philosophy. A logic which traces the natural development of thought must become the organon conducting to a philosophy of nature and a philosophy of mind. It is only a historical logic of this nature which can remove sectarianism in philosophy by showing how antagonistic modes of thought must merge by Dialectic into one. A

\* Lock, § 38.

† Essay, Book I. iv. § 23.

‡ Brown's Home Subscivæ: Locke and Sydenham.

§ King's Life, i. 188.

|| Locke's Works, iii. 574.

\* Works, iii. 383.

† Ibid, 387.

study of the progressive types of thought will show how "that is not first which is spiritual, but that which is natural;" and in the evolution of the idea which underlies the world, it will find a place for every phase of intellectual belief. It will show how theories which in the understanding are disjointed must in the reason, which thus reads the truth of history, be thought together. What holds good of philosophy is true in no less measure of religion. There also history and criticism must go together. It is precisely because Locke combined historical insight with critical temper in religion more than in philosophy that his "Reasonableness of Christianity" still comes with so much life and inspiration. The natural reverence with which he approached religious truths led to his asking, in regard to the Christian faith, not only *Is this true?* but also, *What is the meaning of it?* And this method, we may say in the closing phrase of Plato's "Republic," "will save us also," and will create a religion like Locke's, as *Le Clere* describes it, "tainted neither by melancholy nor superstition."—*Westminster Review*.

### ON EXAMINATION PAPERS.\*

In one of Artemus Ward's wildest burlesques, there is an account of the "Pirate of the Canal," who struggles against modern improvements and increasing centralization, till, like another Götter von Berghungen, he falls in the unequal combat, and dies exclaiming, "We are over-governed!" Similarly, in these days, the professional existence of a schoolmaster must often close with a similar cry, giving the main conviction which is the outcome of many years of suffering, "We are over-examined." In the future, perhaps, if not already, examinations may be regarded as the final cause of existence, and the human race may be conveniently divided into two classes, the examined and the examiners. This growing passion for examinations has often been discussed, and its dangers pointed out, by men who are late to command attention, and I do not to-night propose adding my feeble voice to theirs. I shall accept the prevalence of examinations as I accept the prevalence of east winds during the "athermal mildness" of our English spring. But as some prying persons have thought of getting behind the east wind, so I should like to get behind the examiner.

One of the most remarkable things about our system of examinations is our implicit trust in the examiners.

In Prussia, if much depends on the examination, there are all kinds of checks and counter-checks. The marks and papers are sent to a superior authority, and hostile criticism from this authority is, believe, not uncommon; so carelessness, or even want of system, is impossible, for the examiners are themselves examined, and their decision may be set aside. But here it is not so. The examiner shuts himself up with a mass of papers, brings out his list, and sells the papers at so much a pound. At times we may be astonished at the amount of the labour knocked off, and we may be tempted to exclaim with Hamlet (though, of course, without the irreverent mind which could see any similarity between the mole and the examiner),—

"Can't work in the earth so fast?"

\* A Paper read by the Rev. R. H. Quick before the College of Preceptors.

But the results, whatever they may be, are never questioned, and any English examiner would think himself insulted if he were called upon to justify his decisions. In one way this implicit confidence in our examiners is a very healthy sign. It is proof positive that we can trust the English gentleman to do what is fair between man and man without the slightest bias of any kind of favouritism. But although our confidence in the perfect integrity of our examiners is most assuredly not misplaced, I think the art of examining—a very difficult and an increasingly important art—would make much greater progress if there were more consultation among examiners, and more discussion and comparison of the different ways by which they arrive at their conclusions.

A most valuable contribution has lately been made to our knowledge of the art of examining, by the publication of Mr. Henry Latham's book on Examinations. I wish other examiners would work in his spirit, and tell us about aims and methods of examining as he has done. His work so interested me, that I thought the subject of it, even when treated in a very inferior manner, might interest you; but one's time both in preparing and giving a lecture, is necessarily very limited, and I must this evening confine myself to a few hints which suggest themselves to me from my own experience. If I am to say anything useful, I must talk about what I am practically familiar with. Now I have for many years been teaching and examining boys below 16. Beyond that age I have had little to do with them, so I wish you to consider my remarks as referring to the examining of young boys or girls only.

I said just now that I should like to get behind the examiner. This is sometimes impossible, but there is one examiner we may know a good deal about if we will take the trouble, viz., ourselves. Every teacher spends a great deal of his time in examining; and, in fact, his skill in teaching depends to some extent, to a large extent indeed, on his skill in examining. Our subject to-night does not include *rieder* questioning, but only examination papers; and these are set, or should be set, from time to time by the person who gives the instruction. At the end of every stage in the journey—before the holidays mostly—there is an examination by writing. In some schools the masters examine each other's forms; in some cases, an external authority is called in; and occasionally, though very seldom I should hope, the labour is divided,—the instructor does not set the papers, but only marks the answers. I do not think I ever heard of the teacher setting the questions and some one else marking the answers. It is thought, I suppose, that in this case the master would set only those things which he knew the boys to be familiar with. But I am inclined to maintain that, if the questions are set by one man, and the answers looked over by another, the teacher should set the questions. Whatever the subject, the area of possible knowledge is always too great for the young to be familiar with every part of it, and nothing is more vexatious and discouraging, both to teacher and taught, than for some one who knows nothing of the teaching given, to come and propound a set of questions which lie just outside those portions of the subject that have been specially dwelt upon. There is, I admit, a grave objection to one man's asking the questions, and another looking at the answers. No one takes proper interest in the answers except the proposer of the question; and yet

it seems to me so important that the questions should follow the teaching, that, in all cases where the examiner is not the teacher, I would have him procure from the teacher a set of questions, and choose from them about as many questions as he sets out of his own head. In this way he will get some notion beforehand of the main lines of the teaching, and if he finds a very strongly marked difference between the answers to the teacher's questions, and the answers to easy questions of his own, he will be able to pronounce that the teacher has worked too much in a groove.

But whether the final examination is in his hands or not, the teacher should from time to time give his pupils a paper on the subject they are studying. But papers must be set, and for the most part looked over, out of school; and here comes in the obstacle of laziness (or, to use the objective rather than the subjective name, want of time,) which teachers, as far as I have observed, are not more exempt from than other mortals. The day for the paper is fixed long beforehand, but the teacher, per-*adventum* himself he can go to work and set it at some odd time before it is wanted. So he puts off till he can put off no longer, and then he sits down and dashes off a paper, asking just what comes into his head at the moment. I think I have got behind the examiner here. Certainly I must plead guilty to having, often and often under-estimated the time it would take me to set a paper, so that I have had great difficulty in finishing it, and then have left out in my hurry some portions of the subject which my pupils certainly ought to have been examined in. The best way to avoid this danger is, I believe, to prepare material for the paper all through one's teaching. To do this properly, we must have made up our minds what sort of questions we are going to ask: we must have arranged our different types of questions, and we can then collect good questions under the various headings. I shall perhaps explain my meaning best by taking a particular subject. Suppose we are reading a foreign book with our pupils. We have several objects before us. First, we wish to exercise our pupils' intelligence; secondly, we want to confirm and advance their knowledge of the grammatical construction of the foreign language; thirdly, we wish to fix in their minds all the important words or idioms that occur in our author; fourthly, we must see that they enter into the meaning of the book they are reading, and can give a clear account of every passage, even of passages difficult in expression or allusion.

This is by no means an exhaustive account, but some such scheme of objects we should always settle beforehand. Our examination paper is to test, as far as may be, our success in each of these particulars. The intelligence of our pupils will be tested by questions of very different kinds; though how far we have contributed to its development, must always remain undecided. Questions will occur to us from time to time which cannot be answered by mere memory, and such questions we should carefully treasure up till they are wanted. Other questions will occur to us in great numbers, and we should enter them in a note-book under various heads, either when we are preparing to give a lesson, or, perhaps better still, when we have given it. I may say in passing, that if the teacher mark his own book, this will often save his time in thinking of *hard and good* questions, and will also enable him to ask the same question again and

again—a most important point in teaching. But it would be unwise to mark in a book which must be left about, the pieces especially good for setting in the examination; and besides, our questions had better be registered under their proper categories. How should we test our pupils' knowledge of the grammatical structure of the foreign language? Not, most assuredly, by asking, as examiners are too prone to ask, about some anomalous words which are seldom seen except in grammars or examination papers—the use of the regular plural of the French words *ail*, *e.g.* or the gender of *lepus* in Latin, a word which some old grammarian has done a disservice to the human race by mentioning as a feminine, though it does not occur with an adjective in any extant author. The tendency to ask what nobody should try to remember,—to ask, *e.g.*,

"How many notes a sackbut has,  
And whether shawms have strings,"—

is the besetting sin of examiners. In history, geography, and kindred subjects, a defence of this practice has been attempted. If, it has been argued, the examiner knows unimportant things, he must *a fortiori* know the important. But, allowing this to be true, the practice is still utterly unjustifiable. We want to encourage intelligent study, and the examiner has no right to ignore results, and to ask questions which throw all study into confusion, give a fictitious value to trifles, and thus injure the student's power of selecting what is really important. But, in examinations on language, not even this miserable defence can be set up for asking about mere eccentricities. These things are often better known to school children than to scholars who can use the language. As I have said, a piece of knowledge considered essential for school-boys, viz., the knowledge of the gender of *lepus*, would not be acquired in reading through the whole of the Latin classics. Of course I admit that "*exceptio probat regulam*"—not indeed in the ridiculous meaning, or no-meaning, sometimes attached to those words by people who are foolish enough to suppose that a rule is established by the production of instances in which it does not hold; but *exceptio probat regulam* is true in this sense, that by the statement of an exception as such we show the rule. If we say, "there were 10 sheep in the field, and one of them was black," this saves us the trouble of asserting fully that nine of them were white, and one black. Thus the mention of the exception shows the rule. In the same way the learning of exceptions as such is often a good way of learning a rule, and it is probably easier to remember that *arbor* is the only feminine word ending in *or*, than it would have been to remember that no feminine ended in *or*. I would therefore by no means exclude questions about peculiarities; but they should not be made much of, and they should always be given in such a way as to test the pupils' knowledge of the important thing, viz., the usual. If we set the declining of *domus* in Latin, or of *Haar* in German, we find whether the pupils have learnt about those special words, but we do not test their knowledge of anything beyond. Failure in this case is of little importance. But if we take words, which belong to a large class, say *amicus* or *frater*, a breakdown here will be a very different matter. Our chief rules should be, as in other subjects—first, to ask about things really important, and next

to put the greater part of the questions in such a form that the ordinary candidate may be likely to answer them. If the examination be a pass examination, all the questions should be of this kind, but where the relative position of the pupils must be determined, some more difficult questions may be necessary. The easiest questions, however, will often scatter the pupils more than the inexperienced would believe.

In preparing beforehand for good grammatical questions, we should make a collection of typical questions. These typical questions should refer mainly to classes of words, and only to such special words as are essential, *e.g.*, the pronouns and the auxiliary verbs. Our questions must always test the foundations as well as the superstructure, or we shall find that pupils who have been two or three years at a language, make blunders which would have been almost impossible at the end of the first six months.

Let us now consider another heading under which we should prepare for the examination. I very often take up examination papers on foreign books, and see nothing but two or three long pieces set for translation, and a few questions which these pieces suggest. If these are good papers, there can be no such thing as an art of examining, and you and I this evening are looking for a mare's nest. But these papers are sometimes set in a hurry by examiners who know the language in which the book is written, but do not know the book itself. No doubt a good long piece should be set to test the pupils' style as well as accuracy of translation; but in many cases, when the subject has been thoroughly prepared, the pupils will lean almost entirely on their memory for these translations. Mr. Bourne, of Bedford, has lately pointed out with great force that the translations in the Oxford and Cambridge Locals are very much over-prepared, and that pupils are kept for a whole year reading and re-reading a few pages, till they can go on with the English without getting more than a start from the original. Similarly, in the elementary schools, children can sometimes "read" with the books shut quite as well as with them open. The remedy proposed by Mr. Bourne is this, that the subject should not be announced till six months before the examination. I would suggest another possible remedy, which may be applied more generally. Do not set the piece exactly as it is in the author. The pupils should be warned that variations may have been introduced, or, at least, some words or clauses omitted, so that they will fail if they merely translate from memory. Besides the piece taken with slight alteration from the author, I would also set a piece of condensed narrative written by the examiner nearly in the author's words, and containing only such words and idioms as the author's narrative supplies. This will be far easier than "unseen" passages, but it will be a good test of the kind of construing to which the pupils are accustomed, and will give better play to their knowledge and intelligence than the piece which they have construed, or heard construed, many times before. Besides, a piece of this kind can be made to embrace words and idioms and allusions which lie far apart in the original. Such a piece, too, can be made very easy indeed at the beginning, and more difficult as it goes on.

(To be Continued.)

# MISCELLANEOUS.

SIR WILLIAM THOMPSON.—We quote from *The World* the following sketch of Sir W. Thompson, F.R.S.:—As a natural philosopher, Sir William Thompson is in the higher department of mathematical physics much what Tyndal is in the science of phenomena. An Irishman by birth, he was bred a Scot, and educated an Englishman. Celtic fervour, Scotch earnestness, and English despatch seem united in his composition. Intense intellectual activity and physical energy have characterised his whole career. At Cambridge he won the "silver sculls" and the Smith's Prize. At seventeen he had commenced his career of discovery. At twenty-two he was Professor of Natural Philosophy in the University of Glasgow—a post he has ever since retained. In 1866 he was knighted for his distinguished services in connection with the Atlantic Telegraph. The highest academical honours have been heaped upon him. His name is co-extensive with the whole range of electrical science and molecular physics. No physical questions seem too large or too profound for his grasp of intellect. His theory of the dissipation of universal energy is comparable with Newton's theory of gravitation in the largeness of its generalisation. His "Natural Philosophy" is a monument of dynamical learning in part the work of Professor Tait, his Edinburgh colleague. In telegraphy his name is a household word. Sir William as Professor resides at the new University buildings, situated on Gilmohill, a pleasant western suburb of Glasgow. A magnificent astronomical clock of his own invention stands in the lobby, with all its works in view under glass. A parrot, the trophy of some cable-laying expedition to the tropics, pearl-gray with scarlet tail, salutes you as you enter, with "Hallo! Who you?" Dr. Redtail sometimes salutes his master, when he enters hurriedly after press of work, with "Late again, Sir William; late again!" Sir William is in great part emancipated from the work of teaching his class; but every session he delivers a course of lectures on the properties of matter—a wide and congenial theme, which gives him full scope for the vast range of his natural knowledge and the flights of his scientific imagination. It may be said that in these lectures he touches on all things in the heavens and the earth, and some things in neither. Erratic, brilliant, meteoric, his lectures still display the same intense earnestness and enthusiasm for his work. The man is lost in his subject, and is as truly inspired, *intoxicated*, as the artist in the act of creation. Whether he be explaining the mechanics of the hundred-ton gun, or describing the colours of a soap-bubble, there is the same eager interest in all material phenomena. After his morning lecture the day is spent in literary work in his study, in experimenting in his physical laboratory, or at his mechanician's in the city. It must be said that his knowledge of art and *belles lettres* is small. Ho can, it is true, on occasion, garnish his addresses with a classical quotation, but of George Eliot, Carlyle, Tennyson, his knowledge is of the smallest—not, indeed, from any lack of sympathy with that kind of intellectual fruit, but because the spur of his genius perpetually urges him to scientific thought.

INSPECTORS.—*Quis custodiet ipsos custodes?* Who shall inspect our Inspectors of Schools? Startling as it may appear, a proposal has been brought before the House of Commons, by Mr. Rathbone, M.P. for Liverpool, and, what is perhaps, still more startling, not unfavourably received by Lord Sandon, that Inspectors should be subject to a course of apprenticeship and training under the tutorship or inspection of older Inspectors, before they are allowed to commence their duties. Hitherto the appointments to these important offices have proceeded on the principle, or no-principle, that any one could be an Inspector of elementary schools, although he

might previously have never been in *one* in his life, career as a scholar or teacher.

**LETTERS.**—The farmer should sow his P's, keep his U's warm, hire his B's, kill off the J's, remember what he C's, pay all the W's, teach his wife not to T's, and then, take his L's.

**A STUDENT'S CERTIFICATE.**—The Madras Correspondent of the *Englishman*, writes:—"When a world-be learner [man] writes a farrago of nonsense, such as the drama of 'Lord Likely,' which is alluded to in a former letter, it is hard to prophesy what mischief he may do to the minds of his pupils, and when the native assiduous master of a well-known school bestows the accompanying certificate on a favourite student, it is difficult to conjecture what species of training the student must have gone through. The certificate I give here word for word:—

"Ramaswamy has been a student under my tuition for nearly a year in the matriculation class, during which time his attendance was regular. His conduct was throughout exemplary. His philosophic grasp of thought and power of deductive reasoning is rare and high for his standard. I consider him a tolerable English scholar for his standard and opportunities; his attainments in mathematics, especially in geometry, are fair. His knowledge of vernacular literature is a remarkable phenomenon in this iron age, when it is so much neglected by Anglo-Vernacular students. He also distinguished himself by the composition of Tamil essays, written in a style at once comprehensive and elegant, embellished by appropriate rhetorical figures which at once elucidated all obscure thought and offered æsthetic pleasure, and without involving arguments connected by the iron chain of ratiocination. He carries with him my best wishes for his success in life."

Poor Ramaswamy! What wonder is it that he goes forth into the world full of conceit and disaffection, and that with all his philosophic grasp of thought and power of deductive reasoning he remains an ignorant, narrow-minded creature to the end of his days. And of the Master what can be said? The writer of the above certificate is not anxious to show off his pupil, but rather to display the treasures of his vast learning. Nor does he stand alone; he is one of many, and if the teachers are such as he, what can we expect from the pupils?

#### APPOINTMENTS.

*Appointments from 16th May to 15th June 1878.*

G. B. Sengayya, to be Deputy Inspector of Schools, Tanjore Circle, substantive *pro. temp.* on Rs 70 per mensem.

C. Capparawmy Iyer, Acting Deputy Inspector of Schools, Tanjore Circle, to be Deputy Inspector of Schools, Ongole District, substantive *pro. temp.* on Rs 70 *pro. temp.* mensem.

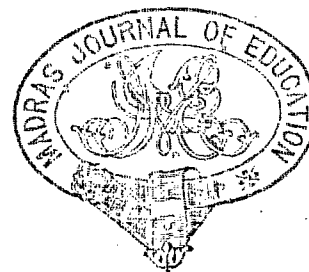
Shanmuga Mudaliyar, Deputy Inspector of Schools, Madhapalli Circle, to be Deputy Inspector of Schools, Bellary Circle.

Singaraedu Mudaliyar, Deputy Inspector of Schools, Bellary Circle, to be Deputy Inspector of Schools, Madhapalli Circle.

Mr. E. S. Benson, M.A., Professor of Mathematics, Presidency College, 4th Class, to be Professor, 3rd Class, for Mr. W. R. Kershaw, Inspector of Schools, 3rd Class and Acting 2nd Class, deceased.

Mr. W. A. Porter, M.A., Principal, Provincial College, Coimbatore, 4th Class, to Act as Principal, 2nd Class.

Mr. E. F. Metcalfe, M.A., Principal Provincial College, Rajahmundry, to be in charge of the current duties of the office of Inspector of Schools, 1st Division, without prejudice to his own appointment.



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#### THE MONTH.

At a meeting convened on the 23rd June for the purpose of considering measures to be adopted to perpetuate the memory of the late Mr. W. R. Kershaw, B.A., Inspector of Schools, and formerly Head Master, Government Provincial School, Bellary, it was resolved that in consideration of the valuable services rendered to the students of the Government Provincial School and the inhabitants of Bellary by the late Mr. Kershaw, both in his official capacity as Head Master and as a private gentleman, a scholarship or a prize be established in connection with the Government Provincial School, to perpetuate his memory, and that for this purpose, subscriptions be raised, and that a copy of the Proceedings and a subscription list be circulated among the students, friends and admirers of the late Mr. Kershaw, after the collection of the subscriptions, a meeting to be held to decide what form the Memorial shall take. Subscriptions will be received by Mr. T. Swami Row, the Secretary, Kershaw Memorial Fund, Bellary.

The Brotherton Sanskrit Prize at Cambridge has this year been gained by Mr. W. F. Webster, B.A., of Trinity College. This prize was, a few years ago, instituted in honour of the Rev. Thomas Brotherton, M.A., of Corpus Christi College, Cambridge, a native of Boston in Lincolnshire, and for many

years a devoted Missionary of the S. P. G. at Nazareth, Tinnevely. Mr. Brotherton, besides possessing a thorough knowledge of Tamil and Sanskrit, was reputed to be the best Syriac and Chaldean Scholar in India; but with all his learning, he was content to live and die among the sands and palm-trees of Tinnevely working for the good of the people around him. The Cambridge University has done honour to itself in perpetuating the memory of so good a man.

We have received a copy of the Warden's Report for 1878 of the Bishop Cotton Schools and College, Bangalore, and we are glad to see from it that the Institution is on the whole in so satisfactory a condition. The pupils now number 253 which, as Dr. Pope observes, is eight more than might properly be the limit, such schools being, with difficulty, manageable when they go beyond 250.

The Matriculation class of 1877 does not appear to have been so successful as might have been expected. It consisted of 24 pupils. Of these 17 went up for examination and 5 passed, two pupils (one of them a young lady) securing places in the First Class. Dr. Pope's remarks on this result are of interest, and we here quote them entire:—

"Three, whom we thought likely candidates, failed. The remainder were unsuccessful, chiefly because they would not, and did not, work for themselves. I must add that I do not see the use of a boy's passing at all, as a general rule, unless he passes in the first class. If he cannot secure half the marks, he cannot be considered a fairly educated lad. When a boy gets through, he either leaves school piling himself upon his success, which is only not a failure; or he joins an F. A. form, where he has to tag at things which he should have known well before he ventured to go up for Matriculation. It is great folly to urge boys to go up prematurely for this test. A first class is of some value to a boy as a recommendation, a mere pass is none. I may remark upon the fact that Miss Edyth Annette Gow is the first girl who has attempted to pass a University Examination in this Presidency. We have had a (so called) College form for girls for some years, and several girls taught but have benefited by a somewhat higher training; but we did not think it well to venture on sending any up for Matriculation till tolerably sure of success. Miss Gow will have many imitators. Our College form was opposed and even sneered at; but, I am sure that in after-days it will be felt that we did good service in leading the way to the higher education of women in this Presidency. I trust, however, that none of the untidiness that often marks the boys' work for University Examinations will be felt in the case of the girls. These Matriculation Examinations are attended with great danger. Boys often care nothing for knowledge, thinking only of getting through any way. If we teach our children to grasp at the shadow while losing the substance, to seek for a merely nominal success, while neglecting to lay the foundations of a solid intellectual education, we shall injure instead of benefiting them; and, therefore, we must make haste slowly in this matter. I am sure too many boys go up for these tests, and go up much too early."

The *Madras Times* thus notices the death of Mr. Joyce, the late Professor of Vernacular Literature in the Presidency College:—

Mr. Joyce, whose death on the 11th inst. at Octacumund, from disease of the heart, was announced by telegram in our issue of Saturday, was a distinguished member of the First Indian Community. The deceased was educated in the late Vepery Grammar School, when the late Rev. G. E. Morris, M.A., was the Head Master. Mr. Joyce was the first boy in the school, and carried off the best prizes in the 1st class. He was a contemporary of Mr. William Mason Schachle, Barrister-at-Law and Under Secretary to Government, Legislative Department. Mr. Joyce was for some years Head Master of the Madrasa, and then Professor of Vernacular Literature at the Presidency College. The deceased was naturally of a reserved disposition, kept little company, and made no show of his talents.

DISTINGUISHED TRAINEE INSTITUTE.—Mr. Yorke, the Principal of this Institution, who was obliged to proceed to his native land for the benefit of his health, reached London, benefited by the sea voyage. But on consulting Doctors Paget and Paul, his disease was pronounced incurable, internal cancer of a malignant type having been diagnosed as his malady. I must confess that this has been a painful news to the community here, especially to those who have had the pleasure of his acquaintance for many years. Arrangements for the nomination of another in his room are now being contemplated by the Home Committee. — *South Indian Post*.

MUNICIPAL AID TO EDUCATION.—The Rangoon Municipality seems to have had some doubts as to whether it was right for the municipal funds to be spent on education. The Chief Commissioner, however, soon settled all doubts on the matter, for he informed the Commissioners "that the Government of India considered it to be one of the duties of municipalities to contribute towards primary education." Does the Calcutta municipality perform its duty in this respect?

THE CALCUTTA UNIVERSITY has approved a set of rules for the admission of women to its examinations in Arts. The entrance will be the same as that for males, but in the F.A. and B.A. ladies may take up French, German, Italian, or an Indian vernacular, in place of a classical language, and botany or political economy for the second mathematical subjects. They will be exempted from attendance at any affiliated college. The examination will be superintended by ladies. — *Bombay Educational Record*.

As we stated in our last issue, we have received a small pamphlet of 27 pages containing notes on *The Secret Way* for the use of Candidates for the F.A. Examination of 1878. We have looked through these notes, and although we cannot agree with all the explanations, we think that many students reading for the examination without assistance will be very glad of the help afforded them by the author.

## NOTES ON THE SECRET WAY.

(Continued from page 249).\*

21. *Aurora*, or *Eos*, the goddess of the Dawn.
22. *So dear, &c.* So dear was the maiden, that he was wont, &c.
23. *Hecatomb*. Greek *hekatombe* = an offering of 100 oxen, a large offering.
25. *World*. A great quantity or number. Cf. such expressions as "a world of trouble." Bacon has "a globe of precepts" = numerous precepts.
26. *Coast-guard*. Explanation.
- Hearthstone*. By Synecdoche for 'house.'
- A strange's*. To her husband's.
29. *GREAT CYRUS*. Cyrus the Great, or the First, the founder of the Persian empire (559-529 B.C.).
- Satrapy*. The district under a satrap, or Persian viceroy.
- The loftiest flower*. The loftiest flower of the "hero-stem." The metaphor is sustained.
31. *Laving* = washing.
34. *Stood on, &c.* Seethes was a semi-barbarous chief. *Man social* = man moving in society, among *social* or companions and fellows = civilized man.
35. *The throne was lost behind the subject's shadow*. Cf. Lord Chatham's speech:—"A long train of these practices has at length unwillingly convinced me that there is something behind the throne greater than the king himself."
39. *Fume* = incense, smoke (the lit. meaning in Latin).
- Loud*. Epithet transferred.
40. *Loose-robed*. Effeminate, luxurious.
- Crust in the antique mould* = Bred up in the old-fashioned way.
- Their'd*. Nerved—metaphorical for strengthened and ennobled.
- According to Herodotus, each young Persian from his fifth to his twentieth year was taught three main things, viz., to ride, to shoot, and to speak the truth.
41. *ASTYAGES*. Last king of Media, reigned B.C. 594-559, deposed by his grandson Cyrus.
- Magi*. The Lat. plural of *magus*, from the Persian *mag* (a priest). Layton uses the English singular *mage* in stanzas 65, 66 *et seq.* The Magi worshipped the elements, especially fire. They cultivated astrology and laid claim to magical arts by which they could expound dreams and foretell the future.
42. *Wilt thou fight*. The allusion is to the tendency of plants in dark places growing towards the light. *Wilt*—understand "their way." Cf. stanza 135.
44. *Hadria*. The Adriatic Sea. *Notus*, the South Wind, as Horace says, is the "Ruler of Hadria."
45. *Destg.* Vigorous, in a good sense. Cf. the Biblical expression, "making thee young and lusty as an eagle."
- 45-46. Shakespeare in the play of *As You Like It* has a reference to the same fact in Natural History, viz., that a deer when wounded forsakes or is forsaken by the rest of the herd and retires to some

quiet spot to die. See stanza 54. Cf. also Cowper's lines in *The Task* commencing

"I was a stricken deer that left the herd."

48. *In the thick*. Colloquial for *at the height*.
- A River*. The River Tanais or Don. (See stanza 54).
49. *Free to*. Open to.
- Keels*. By Synecdoche for ships.
50. *Pirate*. Adj. to forage.
- Foray*. For foragers. Abstract for concrete noun, *to have ravaged*.
- Riders*. The strength of the Scythians lay in their cavalry.
57. *But speak not glibly, &c.* But kings learn not to thank others until they are brought low by adversity.
62. *Dragon seeds, &c.* This is an allusion to the story of Cadmus the Phœnician, who was said to have founded Thebes in Greece, and to have introduced into Europe the first alphabet. "When Europa was carried off by Zeus (Jupiter) to Crete, Agenor sent Cadmus in search of his sister, enjoining him not to return without her. Unable to find her, Cadmus settled in Thrace, but having consulted the oracle at Delphi, he was commanded by the god to follow a cow of a certain kind, and to build a town on the spot where the cow should sink down with fatigue. Cadmus found the cow in Phœcis and followed her into Boœtia, where she sank down on the spot on which Cadmus built Cadmea, afterwards the citadel of Thebes. Intending to sacrifice the cow to Athena (Minerva), he sent some persons to the neighbouring well of Ares to fetch water. This well was guarded by a dragon, a son of Ares (Mars), who killed the men sent by Cadmus. Thereupon Cadmus slew the dragon, and, on the advice of Athena, cast the teeth of the monster out of which armed men grew up, called *Spartoi* or the *Sown*, who killed each other, with the exception of five, who were the ancestors of the Thebans."
64. *Orison or tale, &c.* Eventually this must lead to war between the Medes and Persians.
65. *Trust-winning arts* = belief-winning arts, i.e., clever diplomacy, plausible eloquence, &c.
67. *Having bowed*. Having is participial to "king."
68. *The same sweet face...The Carian's slumber*. Once—so the story goes—when Endymion was sleeping "on Mount Latmus, in Caria [South West part of Asia Minor], his surprising beauty warmed the cold heart of Selene (the moon), who came down," and kissed him into perpetual sleep.
69. *The dark-eyed daughters of the East*. The literal meaning of the Persian word *hauni* is 'beautiful-eyed,' 'black-eyed.' A preparation of henna and indigo is much used by Oriental women to enhance the beauty of their eyes.
72. *Balmed*. Here a trans. verb, meaning 'made fragrant.'
- Passing wing*. A wing in passing.
75. *The readers of the stars*. The Persian Magi were skilled in judicial astrology, a pretended science that referred human events, lives, and characters to the several phenomena of the stars and planets, as results to their causes.
- The world of dreams*. Interpreters of dreams are still to be found on the regular staff of most Asiatic kings and chiefs.
76. *Make mine such talismans, &c.* Furnish me with such talismans, &c.

\* The numbers refer to the Stanzas and not to the Lines.



77. *Fire tower.* This would answer the purposes of an observatory as well as those of a temple. The ancient Persians were fire-worshippers or Zoroastrians. For their true descendants we must look away from Persia itself to the Parsis scattered over India. The modern Persians are Mahomedans.

*Chaldean schemes.* Chaldaea was properly a province of the great empire of Babylon, but its name has all along been used in a vague way for Babylon. The adj. here means 'astrological.' Such things as horologues, horoscopes, (*jātaka*) 'figures of life', &c., may fairly be included in the class named in the text, of Chaldean methods as the Greeks called them.

*Thrid the dark space.* Thrid = threaded. See on stanzas 140 and 149.

78. *Crystal globes.* By gazing into such globes, it was thought a knowledge of futurity could be gained:—

"One great amusement of our household was  
In a huge crystal magic globe to spy."—*Thomson*.

Butler in *Hudibras* calls such a globe "the devil's looking glass," and informs us that one such was used by a pretended magician named Kelly who professed to see apparitions, either in a crystal or beryl looking glass or in a round stone like a crystal. The Hindu *ujjvalakṛān* *ujjvalakṛān* makes similar pretensions.

*Demons haunting impious graves.* The Persian name for the spirits that prey on human corpses—*ghoul* *ghoul* (*Bhutani*)—occurs frequently in "The Arabian Nights' Entertainments."

79. *The gate of horn.* One of the two gates of dreams, the other gate is of *ivory*. Visions which issue from the former gate. See Vergil, *Æn.* vi., the last few lines. Drayton translates them thus:

Two gates the silent house of sleep adorn;  
Of polished ivory this, that of transparent horn;  
True visions through transparent horn arise;  
Through polished ivory pass deluding lies.

Achilles dismisses Æneas through the ivory gate on quitting the infernal regions, to indicate the unreality of his vision.—*Breuer*.

*Proof.* Adjectival to "dream." The dream was "proof," i.e., secure against all the magical arts of the astrologer, "charm he never so wisely."

*Filled of divine love.* Frustrated in his attempts to learn by supernatural means; "of" = as regards.

80. *But where, &c.* = but in such cases as are not clearly 'explained' by his science, he manages with a little common sense and a great deal of craft and cunning to furnish some kind of answer.

*Grave-browed, &c.* = with brows heavy or "big with thought."

81. *Glassed* = reflected, imaged.

*Faithless Jason... Medea.* Jason was, according to the old Greek story, sent in quest of the golden fleece that was in the possession of a king of Colchis and under the charge of a dragon. He sailed with some other adventurers in the ship *Argo*, from which circumstance the whole band were called the Argonauts. The Colchian king's daughter, Medea, falling in love with Jason, told the latter how to get the fleece. Jason then left for Greece with his princess whom he had already made his wife. After some time he deserted her. In revenge she

killed the children she had borne to Jason, and fled to Athens in a chariot drawn by winged dragons. Here she married king Ægeus.

91. *Cithæron.* A mountain in Greece a little north of the isthmus of Corinth. Here Bacchus, it is said, compelled the women to celebrate festivals in his honour.

*Maenads.* The term "Maenades" was given to the Bacchantes, or female companions of Dionysos or Bacchus, the god of wine and revelry. The name is derived from the Greek *mainomai*, 'to be mad,' and means 'maddened,' frenzied, frantic.

*Car of Panthers.* In old sculptures Bacchus is frequently represented as riding on tigers or panthers, or as drawn in a chariot by these animals. The car referred to is the god's.

92. *And where, &c.* And where Zariades used to go about in his dreamy way, he now—so thoroughly changed was he—reviewed his Asiatic hosts, haughty and angry.

93. *War... Thunder.* Cf. "It is darkest when it is nearest dawn."

95. *Melting out the earth because the scholar of the stars.* The Sciences both of Geometry and Astronomy arose from the necessity of exactness in measuring lands.

*A tombless, buried empire.* Antithesis.

97. *Steed felt as men.* The very horses were eager for the fray. See the magnificent description of a war-horse in the book of Job, xxxix, 19-25. Cf. Campbell's *Hohenlinden*:—

"And furious every charger neighed  
To join the dreadful revelry."

98. *Medean regalia.* "Women" is applied to the Medes in derision. Cf. the epithet "rose robot" in stanza 40.

100. *The scyllas by dividing and breaking up their force to go in pursuit had weakened themselves.* A huge wave carries everything before it as a deluge, but when broken up it is powerless. "Here" = would have been.

102. *All untaught* = entirely or absolutely untrained.

*The serried, shuttle* = the compact attack of battle all making round one point. [*Serried* comes from the Fr. *serrier*, to crowd.]

103. *Had rode.* Archaic "for had ridden."

(To be continued.)

## CORRESPONDENCE.

### A QUESTION ON NATURAL HISTORY.

TO THE EDITOR, JOURNAL OF EDUCATION, MADRAS.

SIR,—Among your numerous readers I daresay there are some scientifically disposed, who can point out to me or tell me the name of any book on entomology that mentions the fact that grasshoppers (of one species at least) cast off their skins periodically like snakes. I was rather astonished a day or two ago, while examining a rose-plant, to see a small green grasshopper going through various contortions, and on closer scrutiny, to discover that it was casting away its skin, looking fresh and green in its new one. The slough it left behind was almost perfect, legs and all, except that it was torn beneath. I am no student of entomology nor do I profess to know

much about insects; but I am anxious to know and should feel obliged to him who should tell me, if books devoted to the science of insects make mention of the fact I am writing about.

CUBDAPA,  
July 13th, 1878.

Yours, &c.,  
SECRETARY.

### EXAMINATION PAPERS.

P. A. Class.

Free Church Institution and Madras Christian College.

ALGERIA.

1. Distinguish between an identity and an equation; a quadratic equation and a quadratic expression.

Show that a quadratic equation can't have more than two roots.

2. If  $\alpha$  and  $\beta$  be the roots of the equation  $x^2 + px + q = 0$ , shew that  $\alpha\beta = q$ .

If  $\alpha$  and  $\beta$  be the roots of the equation  $ax^2 + bx + c = 0$ , construct the equation whose roots are  $\frac{1}{\alpha}$  and  $\frac{1}{\beta}$ .

3. Shew that the quadratic expression  $ax^2 + bx + c$  differs in sign from  $a$  when the roots of  $ax^2 + bx + c = 0$  are possible and different and when  $x$  is taken so as to lie between them.

Determine the limiting values between which the expression  $\frac{4x^2 - 4x + 2}{3(1 - 2x)}$  cannot lie so that  $x$  may be real.

4. Shew that the expression  $\frac{x^2 - 8x + 13}{x^2 - 8x + 15}$  is positive for all real values of  $x$ .

5. If  $ax^2 + bx + c = 0$  and  $a'x^2 + b'x + c' = 0$  have a common root, then shew that  $(a'c - ac')^2 - (a'b - ab')(b'c - c'b) = 0$ .

6. Shew that the roots of  $ax^2 + bx + c = 0$  will be rational when  $\frac{b}{a} = 4 + \frac{c}{ak}$  where  $a, b, k, c$  are any rational quantities.

7. Solve

$$(6) \quad 2 \frac{x+1}{x} + 4 = 80$$

$$(b) \quad (x+5) - \sqrt{x+5} = 6$$

$$(c) \quad \frac{a - \sqrt{a^2 - 4^2}}{a + \sqrt{a^2 - 4^2}} = c$$

8. Write down the values of  $x$  without going through any operation in the following equations.

$$(a) \quad x^2 + 5x - x^2 = 0$$

$$(b) \quad x^2 - 10x - 24 = 0$$

9. Prove that a ratio of greater inequality is increased and a ratio of less inequality is diminished by taking from both terms of the ratio any quantity which is less than each of these terms.

If  $\frac{a-a'}{a'-a''}, \frac{b-b'}{b'-b''}, \frac{c-c'}{c'-c''}$  be equal to one another

prove that  $\frac{ab'-a'b}{a'b'-a'b'}, \frac{bc'-b'c}{b'c'-b'c'}, \frac{ca'-c'a}{c'a'-c'a'}$  are equal to one another and each is equal to each of the former.

10. Find a third proportional to 25 and 400.

PARADISE LOST, BK. II. AND LYTTON'S SECRET WAY.

I. For what portions of the second book of *Paradise Lost* may the authority of Scripture be quoted?

II. Give a short sketch of the different counsels urged in the "Synod of Gods," and state which was adopted.

III. Write notes on Milton's use of the following words:—*partial, wealth, scout, errand, pavilion, champion, dash, horrid*.

IV. Accurately define the meaning of the word *fate* in the following passages:—

(1). And trust themselves to fear no second fate.

(2). Since fate inevitable subdues us.

(3). When everlasting Fate shall yield to fickle Chance.

V. The writer of the Secret Way calls it a *Romanse*. Show how it is entitled to such a designation.

VI. What do you learn from the Secret Way respecting the religious rites of the Scythians?

VII. What course of reasoning led Scuthes first to urge the offer of Argiope to Zariades, and afterwards to play false to Omartes?

VIII. Paraphrase, bestowing especial care upon the portions in italics:—

"Now, of a sudden, over that bright face  
There fell the shadow of some troubled thought,  
As clouds, from purest dews

Updrawn, makes sorrowful a star in heaven:

"And as a nightingale that having heard  
A perfect music from some master's lyre,  
Steals into covert lone,

With her own melodies no more contented,

"But haunted by the strain, till then unknown,  
Sicks to re-sing it back, herself to charm.

Seeks still, and ever fails,

Missing the key-note which unlocks the music,—

"So, from her former pastimes in the choir

Of comrade virgins, stole Argiope,

Lone amid summer leaves

Brooding that thought which was her joy and trouble."

IX. Give in simple words the meaning of the following extracts:—

(a). "The sunny bridge between the lip and heart  
Which childhood builds."

(b). "Where reason cuds  
Men have no choice between the Gods and Chaos."

(c). "Natures whose roots strike deep,  
Clear their own way and win to light in growing."

- (d). "Friend," sighed the king, "albeit I needs must own  
All dreams mean temples, where a Mage explains  
Yet when a young man dreams  
Of decking altars, 'tis not for Mecca."

X. Explain the allusions in:—

- (a). "It vanished as a lingering star  
Fades on Cithæron from a Maenad's eyes  
Mid cyathal life and horn,  
When sunrise flashes on the Oar of Panthers."  
(b). "The length of Orphinchus huge."  
(c). The vast plain whereon  
The Chaldee, meeting out the earth became  
The scholar of the stars."  
(d). I am no eagle, I have borne the regis."

ENGLISH PROSE.

*The Talisman, Chapters (1-4).*

I. Under what circumstances were the Waverley Novels written by Sir. W. Scott? Discuss how far he was successful as a novelist.

II. Give a concise account of the combat between the Saracen and the Christian and of the struggle between the former and Theodorick of Engaddi.

III. Render the following into your own English:—

1. "The Saracens were no longer the fanatical savages who had burst from the centre of Arabian deserts; with sabre in one hand and the Koran in the other, to inflict death or the bath of Mahomet or at the best slavery and tribute, upon all who dared to oppose the belief of the prophet of Mecca. These alternatives indeed had been offered to the unwarlike Greeks and Syrians; but in contending with the western Christians, animated by a zeal as fiery as their own and possessed of an unconquerable courage, address and success in arms, the Saracens caught a part of their manners and especially of those chivalrous observances which were so well calculated to charm the minds of a proud and conquering people."

2. "The rapid expression of feeling corrected by the dictates of duty, did not escape the Moslem, who, if he did not entirely understand all which it conveyed, saw enough to convince him with the assurance that Christians as well as Moslems had private feelings of personal pique and national quarrels, which were not entirely reconcilable. But the Saracens were a race, polished perhaps to the almost extent which their religion permitted and particularly capable of entertaining high ideas of courtesy and politeness and such sentiments prevented his taking notice of the inconsistency of Sir Kenneth's feelings in the opposite characters of a Scotland crusader."

3. "Say, hast thou feeling sense and form  
Thunder thy voice, thy garment storm  
As Eastern Magi say."

With sentient soul of hate and wrath  
And wings to sweep thy deadly path  
And fangs to tear thy prey"

(a) Mark any peculiarity in the use of words in passage 1.

(b) Comment on the use of 'which' in passage 2.

(c) Analyze grammatically passage 3.

IV. (a) Explain the allusions contained in

1. The Saracen's head on the sign posts.
2. "Crossing himself as he viewed the darkness of rolling waters, the traveller shuddered as he remembered, that beneath those waters lay the once proud cities of the plain."
3. "The Saracen would have paid dearly for his poetry having his brains dashed out on the spot without any reason assigned for it." But the Scottish knight was spared from committing what would have been a sore blot on his shield of arms."

(b) Give the derivation of:

Mettle, Missile, Poison, Necromancy, Barb and Gauze.

(c) In what peculiar sense are the following words used in your text?

Instant, Binds and Argue.

V. Explain how 'chivalry' taught men truth and frankness.

VI. Explain clearly

1. "Elementary spirits."
2. "He placed the lance in rest."
3. "If the King of England had not set forth to the crusade till he was sovereign of Scotland, the crescent might, for me and for all true hearted Scots, glimmer for ever over the walls of Zion."
4. "Each seemed to possess as far as the difference betwixt the animal and rational species permitted, the confidence and affection of his horse."

VII. State your opinions on the theories contained in the following passages.

(a). "This is a mad man."

"Not the 'were' said: Know Christian that when one eye is extinguished the other becomes more keen, when one hand is cut off the other becomes more powerful and so when our reason in human things is destroyed, our view heavenward becomes more acute and perfect."

(b) He had an observatory of great height contrived, to view the planetary system and heavenly bodies by whose movements as the Christians and Moslems then believed the course of human events is regulated and might be predicted.

*Matriculation Class.*

Cook's First Voyage, 1-1,000.

I. Analyze into clauses:—

(a) Those of our company who have been here with the Dolphin told us that none of the people whom we had yet seen were of the first class; they suspected that the chief had removed and upon carrying us to the place where what they called the Queen's Palace had stood we found that no traces of it were left.

(b) Upon inquiring into the affair it was told that my going into the woods with a party of men under arms at a time when a robbery had been committed which it was supposed I should resent in proportion to our apparent injury had so alarmed the natives that in the evening they began to leave the neighbourhood of the fort with their effects.

2. Expand the phrases in italics into clauses:—
    - (a) Complaint of the injury was made to the chief; and, to give it weight, Mr. Banks started up, &c.
    - (b) We suspected that upon our arrival they had been driven farther.
    - (c) The midshipman, perhaps from a brutality of his nature, ordered the mariner to fire.
    - (d) The next morning we went on shore, where, to our inexplicable surprise, it was not to be found.
    - (e) The exploring party had incautiously advanced too far.
  3. Explain the following passages:—
    - (a) It is somewhat of the consistence of new bread.
    - (b) The whole scene realized the poetical fables of Arcadia.
    - (c) The men discharged their pieces among the thickest of the flying crowd.
    - (d) He proceeded direct to the place of his destination.
  4. (a) State how the Indians disposed of their dead.
  - (b) What was the cause of Tootahai Tamai's sickness?
  - (c) For what reason was Tootahai put under arrest?
  - (d) Why did Captain Cook order the butcher to be lashed?
5. Bring out the force of the words in italics:—
- (a) He would have examined it but for the stench of the body.
  - (b) He pulled with everything but pork.
  - (c) We were but a little nearer than we had been.
  - (d) Without this we could not perform the service.
  - (e) They sat down without the circle and looked on without giving us any interruption.
6. (a) Give examples of *as* used as a conjunction of reason, of time, of concession.
- (b) Give instances where the definite article may be used with proper nouns.
7. Correct the following, giving a reason for (a):—
- (a) He ordered a cock and hen to be brought.
  - (b) Of which we were now become better acquainted.
8. Relate as an exercise in composition the story of the loss and the recovery of the opera-glass and the snuff-box.
9. (a) What is meant by 'the crumb of bread'?
- (b) What is a 'Jerusalem artichoke'?
- (c) Give two meanings of 'discover'?
- (d) Give the etymology and the meaning of 'surgeon' and 'paric'.
- (e) What is meant by the Satellites of Jupiter and how many are they?
- (f) Give the cardinal points of the compass. How many points are there in all?

## THE AIDED ARTS COLLEGES.

From the Report of the Director of Public Instruction.

## CENTRAL INSTITUTION OF THE FREE CHURCH OF SCOTLAND.

The following statement shows the attendance in the different departments of the Central Institution of the Free Church of Scotland during the last three years, the number of pupils who went up for the University examinations, and the number who passed:—

| Years.   | 31st March. |               |                |               | Examined.      |       | Passed.        |               |              |               |              |
|----------|-------------|---------------|----------------|---------------|----------------|-------|----------------|---------------|--------------|---------------|--------------|
|          | College.    | Upper School. | Middle School. | Lower School. | Matriculation. | F. A. | Matriculation. | F. A.         | B. A.        |               |              |
|          |             |               |                |               |                |       | First Class.   | Second Class. | First Class. | Second Class. | Third Class. |
| 1873-74. | 198         | 169           | 355            | 295           | 57             | 29    | 6              | 1             | 32           | 1             |              |
| 1874-75. | 153         | 150           | 370            | 223           | 63             | 38    | 8              | 7             | 31           | 2             | 1            |
| 1875-76. | 179         | 180           | 357            | 225           | 62             | 41    | 14             | 2             | 20           | 3             | 4            |

The College Department is the largest in the Presidency, and in the School Department there has long been no room for much further growth. In the two higher University examinations the institution shows a very satisfactory advance. The result of the Matriculation examination is not so good as usual, chiefly attributed by the Principal to lack of industry on the part of the pupils of the Matriculation class. Mr. Barrow inspected the institution on the 22nd and 23rd July, and his report is not altogether favourable. Mr. Fowler, who has given nearly the whole of this report in *extenso*, ought to have quoted another letter in which Mr. Barrow himself corrects two statements originally made by him, and I must add that Mr. Miller, in a letter addressed to the Acting Director, has impugned the accuracy of other portions of the report.

"In the school department," Mr. Barrow observes, "no less than ten classes contain 45 pupils and upwards, or ten in excess of the highest number (35) allowed in Government Institutions. To my mind such enormous classes cannot be properly taught save by exceptionally able men, and I have certainly no particular reason for considering the native masters in the Free Church Central Institution men of this stamp."

"I understand that the whole of the Matriculation class, numbering 60 boys, is taught *en masse* in English. I believe I am also correct in stating that the seventh or preparatory F. A. class, containing 77 youths, is similarly taught all its subjects. In Germany there is a rule that there shall not be more than 40 scholars in either *secunda* or *prima* (answering to the fifth and sixth forms in English schools), or more than 50 in any of the other classes (*vide* Matthew Arnold's 'Higher Schools and Universities in Germany,' page 114 of second edition). This rule is not, of course,

always possible, as Mr. Arnold says, to observe, but what would German educationists say to seventh and sixth classes of 70 and 80! It may be said that Mr. Miller sides with the Germans in considering that fifty boys are not too many to have in the lower classes, but then we must consider the difference in the teachers. "To compare any of the native teachers of the school classes of the Free Church Mission Central Institution with the highly trained and severely tested teachers in the German *Gymnasien* and *Realschulen* would be absurd. In my view from 25 to 35 boys are quite as many as ordinary native teachers can or should be allowed to instruct. I do not deny that even very large classes of natives may be kept in tolerable order, and may assimilate a certain amount of knowledge in the course of a year, but I do not think the knowledge likely under the circumstances to be 'sound knowledge and useful learning.'"

In a subsequent letter he makes the following corrections:—

"Since sending in my report I have learnt that I was wrong in saying that the sixth class is taught *all its English en masse*. It is only, I believe, Mr. Miller himself who takes the two divisions of the sixth in this way."

"I am also wrong, I believe, in thinking that the seventh (or Preparatory F.A. class) is taken *en masse* in *all its subjects*. Still my argument holds good in *particulars*, though not in *universals*."

I may remark that Mr. Barrow is mistaken in stating that 35 is the highest number of boys allowed in Government institutions, for classes of 40 and 45 and even larger numbers are quite common in the Presidency and Combaracum Colleges. Mr. Miller considers that 40 is the best number, and he has fixed the maximum at 45, because some boys drop off during the course of the session. In exceptional cases this maximum is sometimes slightly exceeded, and as Mr. Barrow visited the school at the commencement of the session, this happened to be the case in some of the classes. I deem it due to Mr. Miller to quote two extracts from the letter above referred to.

"There is a very inaccurate statement in paragraph 8 of Mr. Barrow's report regarding the amount of aid received from Government. It is set down at Rupees 11,817, and this is represented as meeting a total expenditure of Rupees 35,630. It happens, however—and it is stated in the accounts from which Mr. Barrow draws his information—that the amount contributed by Government last year included a special grant for furniture. That grant amounted to Rs 1,800, and it met a sum of more than Rs 4,000, which had been expended by the Mission in *former years*. To show, therefore, what Government really contributed *this* year the sum of Rupees 1,800 should have been deducted from that of Rupees 11,817, or the sum of Rupees 10,017, which it was intended to meet should have been added to the expenditure of the year. The fact is that the total outlay is above Rupees 35,000 per annum, and that of this Government contributes only Rupees 10,017; much less in proportion, I believe, than is granted to any school in the Madras Presidency that at all approaches the standard and position of this institution."

"I have said that I gave but little time to observing the examination. The only part of it in fact at which I was present throughout was when class 5 B was examined *vis-à-vis* in Geography. The examination was on the map of Africa. I am unable to recollect how many rounds of questions were given on it, but I know that before he had done Mr. Barrow had pretty well exhausted my knowledge of the map, and at certainly seemed to me that he had pretty nearly exhausted his own. Now for the first and only time in my pretty long experience of examinations, I then heard every question that was put answered correctly by the boy to whom it was put,

from top to bottom of a large class without failure or hesitation. I remember it so distinctly, because the experience was to me so entirely novel. This, be it remembered, was without any special preparation; for, as Mr. Barrow notices himself, the boys were in entire ignorance of his visit until they saw him actually present. In this subject the answering of the class was absolutely perfect; yet what is said of it in the report is—'The class has a very fair knowledge of the Geography of Africa.' As this happened to be the only examination of which I saw the whole, it leaves on my mind the impression that for the purposes of this report *very bad* is to mean *tolerable*, *pretty fair*, *very good*, and soon in proportion, *very fair* being the highest term of commendation that it is possible to gain."

The Principal's report shows that two evils which are very prevalent in most Colleges and schools are beginning to disappear in this institution. Boys who fail to obtain promotion do not leave to try their fortune in some other school, and those who are going in for University examinations do not remain at home for some months before the examination season begins under the preposterous notion that better preparation can thus be made. A fortnight for private revision is considered beneficial and is allowed, and with this they are satisfied.

An application was made to Government during the course of the year for increased aid. This was not granted, but funds have been obtained from other sources, and there is an early prospect of an increase to the staff of the College Department of this valuable institution.

#### DOVETON PROTESTANT COLLEGE.

The following statement shows that the Doveton Protestant College has nearly the same attendance as it had last year, but that a larger proportion of the pupils than usual are in the elementary classes. The institution about maintained its position in the two higher University examinations, but the number of matriculates was smaller than it has been for some years:—

| Years.   | 31st March. |               |                |               | Examined.        |      | Passed. |                |               |              |               |              |               |   |
|----------|-------------|---------------|----------------|---------------|------------------|------|---------|----------------|---------------|--------------|---------------|--------------|---------------|---|
|          | College.    | Upper School. | Middle School. | Lower School. | Matriculation.   | F.A. | B.A.    | Matriculation. |               | F.A.         | B.A.          |              |               |   |
|          |             |               |                |               |                  |      |         | First Class.   | Second Class. | First Class. | Second Class. | First Class. | Second Class. |   |
|          |             |               |                |               |                  |      |         |                |               |              |               |              |               |   |
| 1873-74. | 32          | 39            | 78             | 51            | Not ascertained. | 4    | 2       | 7              | 2             | 7            | 1             | 3            | ...           |   |
| 1874-75. | 24          | 39            | 88             | 43            | Do.              | 3    | 1       | 7              | ...           | ...          | 1             | 1            | 1             |   |
| 1875-76  | 26          | 41            | 55             | 71            | 12               | 9    | 5       | ...            | 4             | 1            | 6             | 1            | ...           | 2 |

Mr. Adolphus, who took a first class in the B.A. examination this year, also carried off one of the Gilchrist Scholarships. He took the first place in this examination, and the Secretary to the Gilchrist Educational Trust, in a letter to the Under Secretary of State for India, states that he was distinguished for the remarkable excellence of his performance.

Mr. Barrow inspected the institution on the 21st July. He reported the attendance and discipline as being good, but the general result of his examination was not satisfactory. Many of the boys were totally unfit for the classes in which they were placed, and failed to obtain a single mark in some of the subjects in which they were examined. Mr. Barrow instituted a comparison between the cost of this school and that of the Provincial School of Calicut, and arrived at certain conclusions which were called in question by the Committee, and which seem to have been founded on imperfect and incomplete data. Without going into this controversy I may remark that Mr. Fowler shows in his report that the statistics of the year are not in accordance with Mr. Barrow's figures. The fact that the Devon College is a very costly institution is, however, undeniable. This must be the case as long as the attendance is so small. When Mr. Barrow visited the institution the strength of the school classes

|             |    |
|-------------|----|
| Senior B.A. | 5  |
| Junior B.A. | 2  |
| Senior P.A. | 10 |
| Junior P.A. | 6  |

E. P. G. High School, Tanjore

The E. P. G. High school, Tanjore, although it has not assumed the appellation of a college, has now a well but fully-developed College Department containing the four classes shown in the margin. The number on the rolls of each Department during the last three years and the results of the University examinations are given in the following statement:—

| Years.  | 31st March. |               |                |               | Passed.        |               |              |               |              |               |
|---------|-------------|---------------|----------------|---------------|----------------|---------------|--------------|---------------|--------------|---------------|
|         | College.    | Upper School. | Middle School. | Lower School. | Matriculation. |               | P.A.         |               | B.A.         |               |
|         |             |               |                |               | First Class.   | Second Class. | First Class. | Second Class. | First Class. | Second Class. |
| 1873-74 | 32          | 136           | 203            | 137           | 3              | 30            | ...          | 9             | 1            | 1             |
| 1874-75 | 36          | 118           | 248            | 146           | 7              | 23            | ...          | 7             | ...          | 1             |
| 1875-76 | 42          | 145           | 233            | 147           | 1              | 17            | 1            | 8             | ...          | 2             |

The last inspection report received on this institution is one from Mr. Bradshaw, dated the 15th January 1878. Mr. Caldwell stated, however, in his annual report for 1874-75 that he had inspected the school in March and "found nothing to be desired in the working of the several classes;" and the Acting Inspector reports again this year that Mr. Caldwell inspected the institution in November and again "found nothing to be desired in the working of the several classes." The development and success of this institution are mainly due to the exertions of its able Principal, Mr. Marsh, who is carrying on the work of a College with a staff of masters intended to meet the requirements of a Collegiate school.

#### UNEQUAL DISTRIBUTION OF COLLEGES.

It will be remarked that all these Colleges are located in the Presidency town and in the small district of Tanjore. An enormous advantage has thus been given to the Tamil population of this Presidency. This is not the scheme originally sketched out by Sir Alexander Arbuthnot. It was always intended that the Provincial schools should gradually grow into Colleges, but it is not every Head Master who can raise a school to a College, and as yet the Provincial College of Combaconum is the only one which has attained that status. The portion of the Presidency in which a College is at present most urgently required is the Northern Circars. This province, with a population twice as great as that of Scotland and an area one-fourth greater, has as yet derived no benefit from the introduction of railways into this Presidency, and although the establishment of coasting steamers has rendered these districts less inaccessible than they used to be to Europeans, the strong prejudices which many Hindus and most Brahmins have against sea voyages have not been overcome, and very few students come down and prosecute their studies at Madras. During the twenty years that the University has been in existence scarcely half a dozen young men have graduated from the Northern Circars. The want of graduates for the higher posts in the Educational Department and in other branches of the public service has all along been, and still continues, a most serious obstacle to progress in the Northern Districts. The measures now in contemplation for remedying this evil will be noticed in my next report.

#### GEOGRAPHY TEACHING.

(By the Rev. R. H. Quick.)

LET us now consider the learning of a subject closely related to History, viz., Geography. Early lessons in history must be lessons in geography too, for in giving some notion of great men we must awaken an interest in their country. As the American writer says (*Cyclopædia of Education*), interest in Columbus leads to interest in his native Genoa and in Spain from which he sailed, in the ocean he crossed, and the islands he discovered. In this subject too I should make it the main object to establish centres of interest. But here I seem move hopelessly at variance with the makers of our school books than even about history. In preparing these lectures it occurred to me to walk over to the South Kensington Museum, which was not far off, and to examine the books from which children get their first notions of this subject. Here I was allowed to inspect a case full of

geographies arranged in alphabetical order, and I looked through them, especially attending to those for children, from the beginning of the A's to somewhere in the B's. What was the result of my examination?

One of the first books I opened especially interested me, and that for several reasons. In the first place it was, as the title page announced, intended for use in the nursery, so it would show me what I wanted to get at, the very first lessons given to children. In the next place the publishers, Messrs. Simpkin and Marshall, a very respectable firm whose word I should not for a moment doubt, assert also on the title page, that the number of copies issued up to the date of that edition was 182,000. This alone gives immense importance to the book. Some 200,000 children must have received their first impressions, which as we all know are enduring impressions, of the nature of geography from these pages. Besides this, there was a spice of local interest about the book, for though I had no information about the author except the name, "M. A. Allison," that particular edition, the 29th, had been improved and corrected to the present time (some eight years ago I believe) "by the Rev. Dr. Brewer, of Leeds." With the interest you take in education, you will not accuse me of wasting your time if I read you a lesson or two from a book which some years ago had introduced 200,000 children to geography, and for aught we know may be introducing thousands more now. I have to the best of my knowledge and belief taken quite fair specimens. Indeed I have taken them from the easier rather than the harder part of the book, as English names are simpler to us than foreign names. That I may not seem to give exceptional sentences I will read whole lessons:

LESSON 12. *Question.*—What are the principal rivers of England? *Answer.*—The Severn, the Thames, the Humber, the Mersey, the Trent, the Medway. *Q.*—What are the principal lakes? *A.*—Windermere, Ulleswater, Derwentwater, and Conistone. *Q.*—What are the principal mountains? *A.*—Sea Fell and Skiddaw in Cumberland, and the Peak in Derbyshire. *Q.*—What are the principal islands? *A.*—The Isle of Wight, the Isle of Man, and the Isle of Sheppey. *Q.*—How many inhabitants has England? *A.*—17,000,000. *Q.*—What is the religion of England? *A.*—The religion of England as by law established is Protestant; but all forms of worship are permitted.

\* This is Lesson 12. May I venture to give you also Lesson 13?

*Q.*—What is a University? *A.*—A kind of school where gentlemen study. *Q.*—How many Universities are there in England? *A.*—Four; those of Oxford, Cambridge, Durham, and London. *Q.*—What does England produce? *A.*—Many kinds of fruit, corn, and other vegetables; and there are mines of tin, lead, iron, and coal; these are called natural productions. *Q.*—What are the manufactures of England? *A.*—Flannel, broadcloths, stuffs, muslins, silks, cottons, all kinds of hardware (such as knives, scissors, swords, guns, implements of trade and husbandry), and machinery. Many of these things are sent to other countries, and we have things from them in return.

Nor do I read these extracts for the sake of ridiculing M. A. Allison or the Rev. Dr. Brewer of Leeds? By no means. If the teachers of this country are ready to pay them for writing out lists like these and getting the lists printed, who can blame them for doing this easy work? But what are we to say of the theory of the teachers?

Some eighty or a hundred thousand teachers must have thought that the way to teach children geography was to make them learn these lists of names. When we are told that teachers require nothing but practice, and that there is a danger of making them theoretical if we give them any special knowledge, we may surely ask, would not these eighty thousand have been saved from egregious folly, folly resulting in the stultifying of thousands and thousands of young intelligences, if they had only been taught the simplest truths about their employment?

But I do not wish to be too hard on the teachers who avail themselves of the labours of M. A. Allison and the Rev. Dr. Brewer. With one exception I did not find the other books I examined much better than this. The next book I looked at was "Geography for Junior Classes," by Robt. Anderson. The author or publisher of this little book seems of opinion that small children should have small type, a point on which he differs, decidedly for the worse, from M. A. Allison and the Rev. Dr. Brewer. I will give you a short specimen of this work. Of Farther India the author remarks with truth that "this large and fine territory is little known," but he should have added—except to junior classes: for with his assistance the junior classes would give us a great deal of information about this large and fine territory. "The British territories," they would tell us, "lie along the West coast, and include Aracan, Pegu, with the sea-port of Rangoon and Prome, 240 miles North; Tenasserim, with the port of Moulmein, from which teak is largely exported; Penang, an island with exports of nutmegs; Malacca, with exports of tin and rattan canes; Singapore, a thriving sea-port, from which our chief imports are tin, rice, catechu, gutta-percha, pepper."

I next glanced at "The Student's Modern Geography," by W. L. Bevan, Vicar of Hay. This work seemed well adapted to furnish one of the twelve labours to any young Hercules who had disposed of the snakes of M. A. Allison and Robt. Anderson in the nursery.

But every one knows we are improving in our teaching of geography. Natural science has made its way into the school-room, and we now see the advantage of studying Physical Geography as the basis of all other geography. Mr. Fearon, in his capital book on School Inspection, has insisted that even in the elementary schools Physical Geography should come first. So I was glad to find the next geography for children gave us this newest improvement, and provided us with a manual. It was Bidlake's "Physical Geography for Children." The first chapter consists of a small page and a-half of print, divided into eighteen sections. This is the seventh section: "The earth measures about 25,000 miles round and rather less than 8,000 miles through the centre. The former is called its circumference; the latter its diameter." The twelfth section runs as follows: "The earth is surrounded by a body of air called the atmosphere, consisting of a mixture of two gases, oxygen and nitrogen." At the end of this first chapter of a page and a-half the children are supposed to be able to answer the following questions:—

1. What is Geography?
2. What does it mean?
3. What does the word "physical" mean?
4. What is Common Geography?
5. What is Physical Geography?

6. What is the earth?
7. What is the size of the earth, its circumference and diameter?
8. What is its distance from the sun?
9. At what rate does it move?
10. What are its chief divisions? What is the extent of each?
11. What are the chief divisions of land and water?
12. By what is the earth surrounded?
13. To what height does it extend?
14. What is meant by climate?
15. Has it any influence on animals and vegetables?
16. What is Botany?
17. What is Zoology?
18. What is Ethnology?

Thus we see that Mr. Bidlake expects our children to be turned into young *savants* by studying the first page and-a-half of his book. What would they be at the end of it?

The next Geography I examined was of a very different order from the others I have mentioned. It was "Mary's Geography, intended for the use of children, by Francis E. Barbury." Here for the first time I found an attempt, and I have no doubt a successful attempt, to interest children in the subject. The little book seemed to me in many ways excellent, but even here use and wont proved too much every now and then for the lady who wrote it, and she has given names which in my opinion do nothing but harm. In reading Dr. Donaldson's interesting paper on Memory, in the American Cyclopædia to which I have already referred, I was struck with his answer to the question, Ought we to expect everything to be remembered? "No," he says, "there are many details which tend to assist the mind in conceiving of the thing to be remembered, and these details when they have served their purpose may be forgotten." This seems to me the truth of the matter. I should not wish everything omitted which would not remain in the memory, but I should cut out everything which would not remain and which instead of impressing more important things would only distract attention from them. This lady's little book does here and there give some of these useless and injurious names. To take an instance at random. I have now been in the habit of passing Mechlin occasionally for more than twenty years, I have taken enough interest in it to break my journey on one occasion on purpose to see it; but till I looked into Mary's Geography I never knew and never wanted to know that Mechlin was on a river called Dyle. If at my time of life and after seeing the place I have never needed this knowledge, I doubt much if Mary can need it in the English nursery.

My examination was now nearly concluded, but I did just glance into a book of great renown, Butler's Geography. This, as every one knows, has lived through countless editions. The copy I took from the shelf was published within the last few years and edited by the Rev. Thomas Butler. We have lately found both in ourselves and other people—by, perhaps from motives of politeness, I had better speak only for myself, and I can do this in the most positive manner—most remarkable ignorance of the Turks and their history in Europe. But this ignorance does not extend to our writers of school-books and they pour out their information for the benefit of school-children

"Like wealthy men who care not how they give."

Many people have held that Geography had better be approached from the study of History. Dr. Butler, or his editor the Rev. Thomas Butler, seems of opinion that History had better be approached from the study of Geography. Here is a sketch-history of the Turkish Empire thrown in with his lists of Turkish places: "Turkey was occupied by the Greek or Western Empire till its decay. In 1333 the Turks first crossed into Europe: in 1453 Constantinople was taken and the last remnant of the Greek Empire destroyed. The Turkish conquests spread over Hungary and Poland till 1570. The first great check was given to their power by the Venetians, and from the period of the overthrow of the Turkish army besieging Vienna, by Sobieski, King of Poland, in 1683, the tide of invasion rolled back until confined within its present limits." [Here, by the way, Dr. Butler or his editor in labouring to be brief becomes obscure. The tide of invasion being confined within its present limits would seem to mean that for some time past the Turks have been engaged in invading Turkey. He goes on] "Greece was declared independent in 1827." [Then he adds with condensed wisdom] "The integrity of the Turkish Empire is now only maintained by the mutual jealousies of the great European powers."

I concluded my inspection by looking at "An Abridgement of Butler's Geography for the use of Children." The task of abridging a book for children, as now executed, is the simplest in the world. It is well known that the mental digestion of children is far more powerful than the physical digestion of the ostrich; so the abridger has nothing to do but to cut out all the clauses which do not contain proper names. Thus a book dry and unpalatable enough to begin with is rendered more dry and more unpalatable before it is considered fit for children. The abridger abridges it as he might abridge an orange by squeezing out the juice.

I have now given you the result of my inspection. It was a perfectly fair one: I took the books as they came, and I examined all that seemed intended for children, I do not think I have wasted your time or my own by making these extracts. They give us a terrible insight into a process from which vast numbers of our children suffer, not only at the time, but also in after-life—that process which Brudenell Carter has well called "The Artificial Production of Stupidity in Schools."

But perhaps those of my hearers who know more of the world at large than of the world of school will be tempted to say: "The teachers who use such books as M. A. Allison's are defective not so much in training as in ordinary intelligence. Before intelligence books of this kind would vanish as the loads vanished before St. Patrick. But if a man is a blockhead all the training and all the treatises and all the lectures on education we were ever afflicted with can't make a sensible man of him." This is the view naturally taken up by men of intelligence who have not made a study of the subject; but it is quite an outside's opinion. We are all convinced that our intelligence in other people's circumstances would lead to vast improvements. This is a great mistake. If our intelligence puts up with our doing just what is usual in our circumstances, we may be tolerably certain that it would allow us to do just what is usual if we were in other people's circumstances. For want of proper theory and proper training teachers have hitherto been compelled to get



ou as best they could without any kind of guidance. By a natural law they have moved in the direction of least resistance, that is, they have kept to the beaten sheep-walk and gone on contentedly because they saw other sheep before them. I confess I should form a very low estimate of the intelligence of the first teacher who profited by the labours of M. A. Allison; but the hundred-thousandth teacher had by no means the same reason to be ashamed of himself. Whatever we may say about private judgment in religion, private judgment in other matters never can be largely exercised. Chaos would have come again if everyone were to abandon the ordinary method and to start one of his own invention. Indeed every profession is a body, and in all bodies the members perform certain actions made automatic by custom, or if they vary their procedure they do so in obedience to the brain. Now in a properly constituted body not only is the brain hard at work but also the connexion between it and the members is in perfect order. In medicine for instance the country doctor does not exercise his private judgment; but he has walked a London hospital, he knows what the Jenners and Gulls think, has seen what the Pagets and Rowmans do; and he considers it his duty to keep himself informed of the latest improvements both in instruments and treatment, so that in the medical profession the action of the brain affects the action of all the members. But in the scholastic profession the members can only move in the habitual automatic fashion, for the brain and they have no connexion. In this country there are as I believe teachers who in point of intelligence and skill might rank with the most distinguished men in other professions. But no one knows what they think about education, no one but schoolboys has ever been present at their teaching. The ordinary teacher knows nothing whatever about them. He is simply put before a number of boys and expected to teach them. What can he do? Get the ordinary school-books and set lessons. Hence has arisen the market for the 182,000 copies of M. A. Allison. But though we move slowly we do move. Mr. Lowe as we have seen thought that it would be absurd if not mischievous to attempt any connexion between the brain and the members of the teaching profession. The present Government has advanced so far as to admit that such a connexion would be desirable and even to promise to experiment with a grant of £400 a year. After such a tremendous stride as this we cannot wonder that the energy of the Government was exhausted and that it was too weak to take the next step and keep its own promise. But in another century or two, or even earlier at the pace we are now going, £400 a year from some source or other may be forthcoming; and meantime the brain is endeavouring to communicate with the rest of the body though the stomach has no supplies wherewith to nourish it.

Now that I have been lecturing you on the impossibility of using private judgment in teaching, you will think me somewhat audacious when I proceed to recommend the use not of your private judgment but of mine. I admit that it does seem somewhat presumptuous, but I may take it for granted that you would not have come to-night if you had not expected to learn what my private judgment was, and I by no means wish you to adopt what I suggest until it squares with your own private judgment also.

In Geography as I said the main thing is to establish centres of

interest, and it does not seem to me to matter much where these centres are. We must be careful not to argue deductively as Pestalozzi did about the human body. That with which we are most intimately connected interests us most, said he; and this seems a reasonable premise; but he went on, We are most intimately connected with our own bodies, therefore our own bodies interest us most. And from this syllogism he invented the practice of teaching children the names of all their bones. Perhaps a similar notion has led to our always teaching English counties and county towns in our first geography lessons. But children do not take more interest in Harwich than in Honolulu, indeed not so much interest if you can show them pictures of the inhabitants. I cannot quite agree with Mr. Fearon that physical geography should come first. I should prefer *personal* geography if I may coin an expression, geography, that is, which is connected with some distinguished person. I want to see some of the most striking incidents of travel written in a picturesque and simple manner for children, and I should begin geography with these. The love of the marvellous and the love of adventure are to be found in the minds of all children; and by appealing to this we can soon establish centres of interest. I should like the name Australia to bring to their minds that mournful but grand story of the Burke and Wills' expedition; and I would rather they should know how bravely Wills waited for death, making half tender, half playful entries in his diary as long as he could write—I would rather they knew and admired such heroism as this, than that they should be able to run off all the divisions of Australia with the rivers and chief towns. Yes, you say, but we are talking of geography. Yes, I answer, and a child who has once got interested in the Burke and Wills' expedition has made a settlement in Australia which merely for the sake of geographical knowledge will in the end be far more valuable than all the lists in the Student's Geography itself. When the child once has some ideas connected with the name, every chance conversation may give accession of knowledge. A visit to the Zoological Gardens shows what sort of things the Australian kangaroos are, and association renders both ideas more permanent. Then the child sees some one who has been in Australia or is going there, and this gives fresh life to previous knowledge. Once awakened interest and you have set light to the fire—it will burn up without further stoking. Similarly I should like any mention of the Islands in the Pacific to remind the children of Bishop Patteson; Borneo might be connected with Rajah Brooke; places in India might be pointed out where the Victoria Cross was won during the Mutiny, and these heroic deeds might always be associated in their minds with our Indian empire.

From the very first children will like to see maps if the right kind of maps are provided for them. But just as in children's books we do not want a small book to contain a great deal, but we want a large book to contain a little, so in maps. They should be as large as possible, and should contain almost as little as possible. Atlases for the hand are too small, and there is always some trouble in putting up and taking down wall-maps; so I want to see maps published in rolls round a stick similar to the picture-rolls of Messrs. Partridge. It has been said that the mind should be treated like a chromo-lithograph, and a separate stamping given for each colour, that is, that

there should be several maps of the same country, one map giving its physical features, another its great political divisions, another its chief towns and so on. And this is quite my own notion. Large and perfectly simple maps should be prepared to illustrate the book of adventures I have mentioned; and there should also be bold pictures of the natives, and of animals, trees, &c., connected with the main centres of interest. I am afraid that here again I shall seem a schemer; but there is already one very good book, through which some thousands of children (though I fear nothing like the 200,000 little disciples of M. A. Allison) have received their first notions of geography. I mean Miss Hack's "Winter Evenings or Tales of Travellers." This is an excellent book in every way except in choice of language. In this respect Miss Hack has not been nearly so successful as Miss Yonge has been in the "Stories of History for the Little Ones."

Mr. Grant Duff in a recent magazine article on a *Liberal Education*\*—an article with many good things in it though sadly disfigured by the old error of taking education as an imparting of knowledge—has proposed this as the main subject in his curriculum, a knowledge of the earth we inhabit. And among our various knowledges there is no other that is so capable of daily extension all our lives when once our interest is excited, there is no other which so readily connects itself with almost everything we read and talk about. Do not think I despise a knowledge of geography or that I object to the works of M. A. Allison, Robert Anderson, and the Rev. Dr. Butler because they give too much of this knowledge. Not at all; I value this knowledge very highly and I object to these authors because instead of teaching geography they scare children away from it. The first thing to secure is interest, the second thing is interest, the third thing is interest; and there is nothing in which interest may more easily be excited and kept up than in Geography.

The generalizations of physical geography belong as I believe to an advanced stage of the study, but the physical features of particular countries may be early comprehended by means of really good maps. Mr. Fauntorpe's Physical Atlas is excellent, but we want the same and similar maps on a larger scale.

There are in my opinion three principal reasons why instruction in geography is so unsuccessful. First and foremost the teachers know and still worse care very little about it themselves. Secondly there are numberless bad books on the subject and very few good ones. Thirdly in this subject apparatus such as maps and pictures are of great importance, and for fear of expense and trouble this apparatus is seldom sought for.

Two or three weeks ago I let a London street boy carry a parcel for me and I promptly availed myself of the opportunity to ask about his schooling. He had been at school he said, and had passed in the fifth standard. "What was the best thing you learnt at school?" I asked. His answer rather surprised me. "Oh, geography was the best thing," said he; "I liked drawing the maps." This brought home to me very forcibly the importance of finding employment for the hands as well as for the eyes and brain. But

\* In the *Fortnightly Review* for August 1877.

† *Elementary Physical Atlas*, by Rev. J. P. Fauntorpe. (Stanford).

map-drawing as we generally conduct it, is too difficult for children, and very often teachers use it as a kind of exercise that can be marked rapidly. It then ceases to be anything but a display of neatness or the want of it. If the boys are asked about the most important places on their own maps they will not know the position of them, and in large forms I have known boys save themselves trouble by introducing the names of their acquaintances as towns, instead of the names furnished by the map-makers. Where the boys' maps are so carelessly marked that improvements of this description pass unobserved, very little geography is learnt from the map-drawing. But suppose a master takes a coast-line, say the south coast of England, or a river, say the Rhine or the Danube, and lets his pupils draw it again and again till they can do it with fair accuracy from memory, he has given them a good notion of the lie of the coast-line or river. I think the attempts should be made on prepared paper giving many lines of longitude and latitude, which would prevent any great error: and at first the exact position of some important places might be indicated by points. The teacher might help by drawing attention to the chief features of the subject. *E.g.*, suppose the Rhine has to be drawn, an examination of the map will show that there are several natural divisions of it, the first from its sources to the Lake of Constance; the second from Constance to Basel; the third from Basel to Mainz; then after a short but complete bend it flows in a new direction from Binger-loch to Cologne and so forth. The direction and comparative length of the different divisions must be noted, and the relative position of important points. Thus it will be observed that Bingen is nearly due North of Basel, and that the course of the river from Bingen may be determined by drawing a straight line from the east end of the Lake of Constance through Bingen. After making such observations as these the pupil will soon be able to take a piece of paper and draw the course of the Rhine with tolerable accuracy, a much more satisfactory geographical feat than that of giving the names of the German Duchies with their capital towns. I once met with a book called "the Life of the Mosel," a book intended not for the school-room but for the drawing-room; but it seemed to me that such a book about two or three of the main rivers of Europe would be an admirable book for the young. In studying rivers we want a map of the course of each separate river. A roll of river-maps would be a great help in the school-room, and such books as the *Cruise of the Water-Lily* and Mr. MacGregor's voyages in the Rob Roy canoe, would make the study of these rivers very entertaining.

The maps in the school-room for the younger children should be wall-maps or map-rolls only. Atlases to be good for anything must be too costly for children's very trying use. But soon an atlas should always be at hand, and we have at least one good school atlas for political geography, that of the Rev. Geo. Butler, of Liverpool. When the pupils have an atlas, the wall-maps and map-rolls are much better without any names of places. A good way of examining a class is to ask questions about the map and to let every one write the answer to each question in column on paper, using either pen and ink or blacklead pencil. Unless there is much more than the usual space in the school-room A and B questions must be asked, so as to avoid copyings. The temptation to copy when a glance will be suffi-

cient is to most children irresistible. The teacher should give the number of each question and should at the same time write the correct answer with its number on his own paper. The questioning being over the pupils are furnished with coloured-chalk pencils, the master reads out the right answer and the pupils mark an R or a note of interrogation against answers which are right or doubtful. The papers are then given up and the master can easily look through them and award marks. I much prefer the plan of making the pupils mark their own answers, as they want to know at once whether they have been successful or not, and while the mind is interested in the matter it can receive lasting impressions about it. If the pupils are dismissed and do not know the right answers till another time, a good opportunity of impressing what is right and correcting what is wrong is thrown away. The same is true in dictation and other lessons.

My recommendations to teachers of geography may be summarized very briefly as follows:—

- 1st. Get interested in the subject yourself.
- 2nd. Get your pupils interested in it.
- 3rd. Have and use good apparatus.

One night in London as I was walking by myself two little boys hurrying from their work overtook and passed me. As they went by I just caught the following words, which were audible from the clearness of the speaker's voice; he was in fact a mere child:—"I always do the best I can for our master," said he, "for he's a good master and patient. If ever I can't do anything"—here the voice passed out of hearing. I have often thought of these few words. How little that master knew that the child gave him credit for his patience and was grateful to him for it! And so it is with most of us. We do not realize how much we are to the young, and how keen are these feelings about us. We make ourselves the measure of all things, and this entirely prevents our understanding children. We have much that children have not. As I have endeavoured to explain we have numberless trains of ideas which give us considerable power of rapid thought and also very varied intellectual powers. Our intellectual powers then are immensely in advance of that of young people. But our power of feeling and our power of imagining is not so great as theirs, or rather I should say perhaps that our imagination is far less vivid, and the play of feeling in us far less easily aroused. We think of the happiness of childhood, and thank God it is in the main happy, and a child without happiness is, as Jean Paul says,\* like a butterfly without wings. But there is a shadow-side to this, and the sorrows of childhood are very real too. The strength of the child's imagination becomes a source at one time of intense delight, at another of anguish no less keen. And as Michelet has pointed out,† the child is much more absorbed in its present pleasure or pain than we are. We have learnt by experience that neither joys nor sorrows are lasting, and we console ourselves in all trouble except the

very greatest by reflecting that things will seem different to us a few weeks, perhaps even a few hours, hence. But the child does not know this, and if he is wretched he has no hope of escaping from his misery. Thus there is an intensity in the joys and sorrows of childhood which we little understand.

In concluding, I fear the various hints I promised you must condense themselves into a very few words. Remember the nature of your task. You have to lovingly superintend the development of your children's faculties. You must then forget yourselves and make everything centre in your study of children. Try to enter into their minds, try to understand their likes and dislikes, try to see things from their point of view. I have said that the science of education is the science of human nature in its early stages; and in this science everyone who will carefully observe young people may make his own discoveries. Let me strongly advise you to take notes of your observation. That looking-before-and-after faculty which is said to be peculiar to man should be exercised by the schoolmaster. The work of the school-room should be carefully planned and prepared beforehand, and the master should keep a private note-book in which the success or failure of the lessons is carefully recorded, and also an account of every experiment he attempts and the result of it. And remembering that education is much more than instruction, he will consider all the influences which act upon his pupils. One influence especially he will always take into account, the influence of books which children read for themselves—play-books as they used to be called. As books are generally considered the plough of the scholastic husbandman it is astonishing that the effect of reading play-books has so often been entirely left unobserved. At last, however, we are beginning to see that Defoe and Marryat and "Tom Brown" are far more influential writers than Miss Mangrall, M. A. Allison, and the Rev. Dr. Brewer. Only last night Goldwin Smith at Saltire pointed out that the effect of fiction on the young was far greater than that of precept, and that though the teaching of *Sundford and Morton* was not very high the influence of the book was great. We must admit that the outcome of literary instruction is not altogether satisfactory if it leads the pupils to dread books; and yet I fear this is the result too often arrived at where there are no play-books, as is the case in many of our elementary schools. I therefore hail with delight the following announcement in a leading article of yesterday's *Times*, an announcement so important that short as the time at my disposal is I cannot help reading it to you. In telling about Sir Chas. Reed's account of the work of the London School Board, the writer says:—

"Of the minor points of which Sir Chas. Reed speaks there is none of which we approve more heartily than the addition which he tells us is being made of a good library to all permanent school buildings. By this more than by anything else is it likely that the taste for reading will be formed and rendered permanent. The boy who has brought that taste away from school is the possessor of a life-long treasure which it will rest with himself to improve and turn to account. He may and will drop and forget much which he has learnt at school, but he will still retain the means of keeping up what he may find of value, and he will choose for himself by-and-by perhaps more wisely than his early instructors [who have introduced

\* In *Lerana*, the English translation of which has lately been republished by Messrs Bell.

† *Nos Fils*, pp. 88, 89.

him to such works as that of M. A. Allison] have been able to choose for him." (*Times*,\* Sept. 27th 1877.)

One of the very few good things I have ever managed to do was the starting of a school library some years ago in the Elementary Schools at Harrow, and I please myself with the thought that in this way I have been the means of bringing both amusement and good instruction into many a poor family, and we found that our books were read no less by the parents than the children. I should be very glad to think that my visit to Leeds had resulted in the starting of some school libraries, especially in elementary schools. It is a great mistake to suppose much money is needed to start a library. It may be started by a book at a time and the privilege of taking home the book may descend in an order fixed by the master, either an order of merit or of age as may seem best. But one thing is needed which is often harder to get than money, and that is *care*. In the first place the books must be well chosen, they must be *bona fide* play-books such as children will delight in, not school books in disguise. Next they must be strongly bound and the librarian must examine every book when it comes in and not let it go out again if the leaves seem likely to get loose, and thirdly, the managers of the library must remember that the first expense, whether small or great, is not the total expense, but that books in young hands will wear out and must be frequently renewed.

I had intended saying a few words to you not only on the "Scholars' Library," as the Germans call it, but also on the "School Library" in their sense, i.e., the library for teachers. These exist in German schools both secondary and elementary, but are rarely found in this country. To my present audience I will not say what I am often tempted to say, that English teachers do not show interest in the study of their profession; but certain it is that "the literature of teaching in this country is far behind that of Germany and not of Germany only but also of France and the United States. The obvious inference would seem to be that the subject is more studied in France and in the United States than it is in England. Still the kind reception you have given me encourages me to hope that English teachers are at length desirous of being learners. What I want to foster in myself and in my hearers is dissatisfaction—that is, dissatisfaction with ourselves. We may think, perhaps with good reason that as things go our work is very fairly done. Yes, but if we strove with all our might to improve it, would it not become a great deal

\* I am informed by one of H. M. Inspectors that the *Times* has misunderstood Sir Chas. Reed's announcement, that the libraries will merely contain "works of reference" for the teachers, and that it would be illegal to provide a single play-book out of the rates. I hear this with very great regret. The most important thing in literary instruction must be to give the pupils the power and the habit of using books for themselves. If this habit is not acquired, not only will the outlines of History and Geography be lost when the schooldays are over, but even the faculty of reading and writing easily will in many cases go too. Play-books would do more to educate the children of the poor than the very best of school-books. It would be far better to read about Robinson Crusoe and Gulliver than to learn the names of the Kings of England or of the chief towns in Europe. If the law does not allow real books to be paid for out of the rates, school lending-libraries should be started by voluntary subscription.

better? I think it would if we were always endeavouring to get at the true theory of our task and would adopt at any cost what seemed the best means of carrying it out. — *English Journal of Education*.

### PUNISHMENTS IN NATIVE SCHOOLS.

In an article in the *Calcutta Review* on 'Indigenous Education in Bengal and Bahar' is the following notice of the punishments that were formerly common in those schools:—

"If the scheme of teaching be throughout one of dull, dry, plodding, monotonous mechanism—acting on head and heart with all the force of a congealing efficacy—the scheme of discipline may be truly characterised as throughout a *reign of terror*. Kindness, patience, generosity, love—all are alike unknown here. Fear is the first and last and only motive brought into play; punishment, the first and last and only stimulant. In varying the modes of this punitive discipline the utmost ingenuity is exercised. With the cane the master is always armed, as with an instrument as indispensable to his vocation as the eyes for seeing or the ears for hearing; and it is in constant and faithful exercise. The open palm and clenched fist are also vigorously applied to the back, the cheek, and the head. These are but the common droppings that fall with the frequency and the fullness of tropical showers. Of the other varieties constantly exhibited, the following may be taken as those of most ordinary occurrence. A boy is made to bend forward with his face toward the ground; a heavy brick is then placed on his back, and another on his neck; and should he let either of them fall within the prescribed period of half an hour or so, he is punished with the cane. Or, a boy is condemned to stand, for half an hour or an hour, on one foot; and should he shake or quiver, or let down the uplified leg before the time, he is severely punished. Again, a boy is made to sit on the floor in an exceedingly constrained position, with one leg turned up behind his neck. Or, still worse, he is made to sit with his feet resting on two bricks, and his head bent down between both legs, with his hands twisted round each leg so as painfully to catch the ears. Again, a boy is made to hang for a few minutes, with his head downwards, from the branch of a neighbouring tree. Or, his hands and feet are bound with cords; to these members so bound a rope is fastened, and the boy is then hoisted up by means of a pulley attached to the beams or rafters of the school. Again, nettles, dipped in water, are applied to the body, which becomes irritated and swollen; the pain is excruciating, and often lasts a whole day; but however great the itching and the pain, the sufferer is not allowed to rub or touch the skin for relief, under the dread of a flagellation in addition. Or, the boy is put up in a sack along with some nettles, or a cat, or some other noxious creature, and then rolled along the ground. Again, the fingers of both hands are inserted across each other with a stick between, and two sticks without drawn close together and tied. Or, a boy is made to measure so many cubits on the ground, by marking it along with

the tip of his nose. Again, four boys are made to seize another, two holding the arms and two the feet; they then alternately swing him and throw him violently to the ground. Or, two boys are made to seize another by the ears; and, with these organs well outstretched, he is made to run along for the amusement of the bystanders. Again, a boy is constrained to pull his own ears; and, if he fail to extend them sufficiently, he is visited with a sorer chastisement. Or, two boys, when both have given offence, are made to knock their heads several times against each other. Again, the boy who first comes to school in the morning receives one stroke of the cane on the palm of the hand; the next receives two strokes; and so each in succession, as he arrives, receives a number of strokes equal to the number of boys that preceded him;—the first being the privileged administrator of them all. When a boy wants to go out, the common practice is to throw a spittle on the floor; if it dries up before he returns, he is punished with the cane; or if not, a boy hostile to him may, with or without the cognisance and connivance of the master, come and wipe it out, in order to ensure his punishment. When, instead of teaching, the *Guru Mahashai* or master betakes himself to the making or the copying of almanacks and horoscopes, as he constantly does, to eke out his scanty allowances, the boys, too, very naturally betake themselves to extraneous modes of diversion and employment, such as playing and pinching, chattering and frolic, waggery and abuse;—but when, forgetting themselves too far, they become obstreperous, and the noise swells into tumult, the teacher is suddenly roused into red burning wrath, and gives vent to his uncontrollable fury in a crushing tempest of indiscriminate flagellation, intermingled with the loud sound of vituperative epithets, too gross and shocking to be recorded here.

“No wonder that the *Patshala*, or vernacular school, should be viewed as it uniformly is, as an object of terror by the young. The conductor of it is the ghost that haunts and scares the young. When a child misbehaves, the most severe and awe-inspiring threat of the mother is, ‘Call the *Guru Mahashai* to take him to school.’ Apart from its general influence in paralyzing the intellectual and moral powers, this system of terror leads to many specific practices of a baneful tendency. It superinduces the habit of crouching servility towards the master in his presence, and the rendering of many menial and even dishonest services. To propitiate the dreaded tyrant, the boys are glad to prepare his hookah, to bring fire for smoking, gather flowers for his pujan, sweep his lodging, wash his brazen pots, cleave thick pieces of wood for fuel, &c. They are induced to go to the bazaar with their written plantain-leaves, and to give them to the shopkeepers as packing materials, in exchange for cowries, fish, tobacco, fruits, betul-unt, pawai, &c., which they present as offerings to the master. Or they are positively encouraged, for his sake, to bring, that is, in reality to purloin or steal, wood, rice, salt, dhal, oil, &c., from home, or from anywhere else; seeing that those who succeed, by fair means or foul, in presenting such gifts most frequently, have the best chance of escaping the

dreaded rod—the best chance of being praised for cleverness though the greatest dunces, for diligence though the greatest sluggards, and for knowledge though the greatest ignoramuses.

“On the other hand, as might be expected, the system tends to generate the spirit of hatred, retaliation, and revenge towards the master. This spirit practically shows itself in various ways. For example, in preparing his hookah, it is a common trick for the boys to mix the tobacco with chillies and other pungent ingredients; so that when he smokes, he is made to cough violently, while the whole school is convulsed with laughter;—or, beneath the mat on which he sits, may be strewn thorns and sharp prickles, which soon display their effects in the contortions of the crest-fallen and discomfited master;—or, at night, he is way-laid by his pupils, who, from their concealed position in a tree, or thicket, or behind a wall, pelt him well with pebbles, bricks, or stones;—or, once more, they rehearse dog-grel songs in which they implore the gods, and more particularly Kali, to remove him by death—vowing, in the event of the prayer being heard, to present offerings of sugar and cocoa-nuts.”

#### ON EXAMINATION PAPERS.

(Concluded from page 286).

We will now consider the tests of knowledge of special words and idioms in the book. The teacher, as I said, should mark his own book, and in the case of peculiar words and all but the most common idioms he should put cross references in his margin, and should make his pupils do the same. In marking words and idioms for special attention, we must be guided partly by the nature of the language, partly by the stage of learning at which our pupils have arrived. The area of possible knowledge in studying a few pages is really of vast extent; we should therefore determine beforehand which points are to be especially attended to; and our marked book, and our collection of questions for examination, will be our safeguard against the besetting sin of all teachers interested in their work—the sin of desultoriness, of dwelling on one thing to-day, another thing to-morrow, and supposing that they have instructed, *i.e.*, built up, when they have merely heaped together a quantity of heterogeneous material, which has no power of adhesion, and is, in fact, scattered to the four winds nearly as fast as it is collected. For idioms, I think a number of short sentences should be selected and set for translation and explanation. Suitable sentences must be noted as they occur in our study of the author.

For words, some of those that have been marked may be given either for the meaning out of the context (and, for the study of the language, it is very important to know a word out of the context as well as in), or for analysis, or for the peculiarities of a class to which they belong. But, in thus attending to the language, we shall run a risk of missing altogether the meaning of our author. I was myself a long time in discovering this. I seem to have been especially struck with it when I had been teaching many years. May I read you a note I took after an exami-

ation in *Cæsar*? These notes, taken at the time, express one's notions with a freshness which is afterwards unattainable:—"Unless I am very much pressed," says my note-book, "I always enjoy looking over examination papers, at least when I have set the paper, and boys whom I have taught have been examined. One gets an insight into boys' minds which seems a revelation. Often we find that what we supposed everybody knew as well as ourselves has really been known to two or three only out of twenty or thirty. At other times we are startled by a spark of intelligence, or get a glimpse of knowledge, which we little expected. An odd thing has happened in this *Cæsar* paper. Some little while before the examination, finding that the boys would not have time to read to the end of the book, and must omit the siege of Gergovia, I told them the story of it. I knew it none too well myself, and have no facility for story-telling; but, to my surprise, it came out in the paper that this was the only bit of the history they knew anything about. The history they had read in *Cæsar* they had hardly taken in at all. When the attention is fixed on the constraining, the meaning of the whole seems to escape notice. To test the boys' general knowledge of the subject, I set a number of short sentences from the *Cæsar*, which were to be translated and explained from remembrance of the context; but very few boys could do anything with them." Now it is true that many great classical works which boys read are above their understandings; and while the reader's knowledge of the original language is small, he would probably get far more knowledge of the work from a translation than from the author's own words. Still, one of the objects in reading must always be to understand the book read, and I think the examiner should not be satisfied without convincing himself that the learners have not regarded the book merely as a collection of examples to illustrate the rules of grammar. This, then, should be one of our headings.

I have said that boys' written answers are often a revelation to a teacher. He finds that his pupils are wholly ignorant of many things which they once learnt, and were therefore supposed to know. He sees that his teaching has been defective in this or that particular, and he resolves to remedy these defects as soon as possible. But the examination comes at the end of the term, and when it is over, the teacher has, perhaps, not even energy enough left to put his impressions and resolutions into his note-book. What is the consequence? Holiday thoughts and interests partly obliterate the traces of the examination, and when, at the end of a month or six weeks, he sets to work again, he unconsciously moves along the old groove. I should strongly recommend the setting of very short papers—say of 15 or 20 minutes, or, if the form is a large one, of a 10 minutes' paper—now and then during the term. These papers would give a hint of the kind of thing going on in the boys' minds, and would often lead to important changes in the teaching. Perhaps an examination by short papers at the middle of the term would be good, and the marks might count with the marks at the final examination.

But when the number of boys examined is large, the labour of looking over examination papers becomes very severe. I have known a very rapid worker, but a thorough examiner, confess that it took him on an average 20 minutes to mark each boy's papers; and this 20 had to be multiplied by 60, so that the marking of a single set of

papers took 20 hours. Inferior workers who are at all thorough will spend 10 hours in correcting the simplest 2 hours' paper set to a form of five-and-twenty. But then comes in a difficulty. The master arranges his marks beforehand; and if the paper be carefully set, he will be able to apportion the marks to the several questions with little difficulty. But how is he to keep a fixed standard in his mind? He comes fresh to the work in the morning, and we will suppose the first papers he looks over please him. He accordingly gives nearly full marks for everything that is substantially right, though there may be some small defects in form. But the next set proves very much better, and yet he cannot mark them much higher without going beyond the maximum. Then he gets a bad paper, which, by contrast, seems to him exceedingly bad; and after a run of bad papers, in looking over which he is tempted to make each examinee suffer for his predecessor's blunders as well as his own, he comes to a middling paper, which again, by contrast, seems exceedingly good, and is marked accordingly. As hour after hour passes, he gets harder and harder to please; but then comes lunch, and possibly a walk, and on his return the examiner sits down again in a much better temper than he was in when he rose. The fortunates who are awaiting him profit considerably by the examiner's lunch and the good effect of a walk in the open air, though these things can hardly be said to give them any preferential claim on the examiner's indulgence. Some men therefore, for fear lest their standard should be altered by a break, go on continuously till the set of papers is finished; but few can work continuously from 8 to 10 hours without getting jaded, and quite unable to judge towards the close in the same spirit as at the beginning.

A fairer way would seem to be to look through the papers question by question; but when there are ten or a dozen questions set in the paper, and the number of the candidates is anything over 20, there are great practical difficulties in carrying out this plan. When I was an undergraduate, we had certain rules given us by our "coaches" for our guidance in examinations. One was, to read over the paper as soon as it was given out, to mark the questions which suited us best, and to do them first; and I see these are just the directions given in the Oxford Locals, although in the Cambridge Locals the candidates are required to keep as much as possible to the order in which the questions are set. But whether the Oxford plan is recommended by the examiners or no, it is sure to be partially adopted. A candidate is puzzled by a question, and passes it over: by-and-by he goes back to it, sees its meaning, and does it. So the answers are sure to be scattered about in the papers, and if the examiner has to hunt for a particular answer in each set of papers, the inevitable loss of time and temper will seriously endanger his doing the work well. I would suggest a kind of compromise between the plan of looking each paper straight through and the plan of taking it question by question. I have said the different things the examination paper is to test may be arranged under certain heads. This will divide the "tester" (if I may invent a short name to take the place of the seven syllables involved in "examination paper")—this will divide the tester into four or five parts; and where the subject does not fall into these natural divisions, it may

be divided arbitrarily. These divisions are called A, B, C, D, E, respectively. Under each heading there may be several questions—A1, A2, B1, B2, &c., &c. The examinees must put at the head of each sheet the letter they are doing, and must always begin afresh when they begin a fresh letter. This may seem a simple thing to require from them, but I must admit that no amount of written directions will secure all the candidates beginning a fresh sheet when they begin a new letter. I have found this even in the case of adults, and it will be *a fortiori* true of children. But the directions are more likely to be attended to if they are given *vice versa*.

If the papers are headed as I have described, the examiner can readily arrange them in different piles—a pile of A's, of B's, of C's, &c. The papers should have been collected in the order in which the examinees sat. It is, of course, best to prevent copying, but the next best thing is to detect it. In many examinations the order of sitting is the alphabetical; but the order of previous performances is better, for the examiner's judgment is confused by the great gaps in knowledge or attainment when he has to go straight from the good to the bad (from the strong to the feeble, as the French more aptly express it), or *vice versa*.

The papers then, by the plan I have suggested, are divided into four, five, or six piles. The examiner can take one of these piles and mark it at a single sitting. If he marks the first pile working downwards, he should take the following pile in inverted order. Thus his freshness of spirits will not always be given to one set of boys, and his jaded sleepiness or impatience to another set. In looking over his papers in this way, he will have no difficulty in remembering exactly what he has set, and the maximum mark he has awarded for each question. It is, moreover, an easier and more interesting task to estimate answers to the same question when one gets the answers altogether, than when they come mixed up in a crowd of other answers to other questions. One can work more quickly also; and this is a tremendous gain in the estimation of all examiners. Another great advantage to the teacher is this: He can ascertain how his pupils do in each division of the subject, and see by the marks registered under A, under B, under C, &c., whether they are weak in construing, or in grammar, or idioms, or in general knowledge of the subject. Another advantage is this: it sometimes happens that school arrangements compel a master to set a longer paper than is on other grounds desirable, and the pressure of work may be so great that time fails for proper correction of the whole paper and yet the list must come out by a particular day. I should very much like to get behind the examiner and see what he does in such an emergency as this—an emergency which is by no means imaginary, but has arisen often, and will arise again. I have heard of conscientious examiners working away literally all night to make out a list which had to be published the next morning; and when I hear of facts of this kind, I cannot help reflecting that perhaps some examiners have not such highly-developed consciences, and moreover that the biggest conscience ever known could not have performed the functions of the nerves, or made a possessor as fit to judge of the merits of composition at the end of the twentieth hour's labour as he was at the end of the second. So I should like to see some safeguards provided against

this tremendous stress of work at the end. If it were clearly announced on a paper that a certain division of it would not be marked as highly as the rest, and was not to be attempted till the examinee could do no more in the other divisions, there would be no unfairness in leaving out this part altogether in looking the paper over. Where everyone has had time to do all he can, of course any part may be selected for omission without unfairness; but where there has been any hurry we can cut nothing out, for if we did we should act unfairly to a candidate who had written the answer to that question carefully, and had thus been prevented from doing better in a part of the paper to which we assigned marks.

In awarding marks, a question arises whether negative marks might not fitly be given for answers showing great stupidity or ignorance. Such marks are not usually given. As soon as the examiner has convinced himself that the answer is good for nothing, he passes on, and does not attempt any measurement in the negative direction. The consequence is, the examinees take shots, sometimes get marks they do not deserve, but more often expose their ignorance. By our ordinary method, the more dashing style of the boy who writes fast and covers plenty of paper is more successful than that of a careful boy who gets through much less writing, but does his little well. Mr. Latham considers this point, and the conclusion he arrives at is, that if negative marks were given, a nervous student, fearing to damage himself by a bad blunder, might be prevented from attempting questions in which he would show himself to advantage. But Mr. Latham still thinks the bad spelling, bad grammar, and guesses which show utter ignorance, ought to involve some positive loss. But examiners, I should say, especially young examiners, are much too easily shocked by blunders, and infer too much ignorance from them. Some students have a nasty knack of blundering even in things they are quite familiar with (I speak feelingly here), and in some cases genuine knowledge may exist side by side with genuine ignorance that to an examiner seems totally inconsistent with it. Boys are familiar only with such parts of a subject as they have been carefully drilled in, and their knowledge in that area does not connote a knowledge of anything beyond; and when we have reached the age of tolerance which may be said to begin at forty, we know too much of the blunders of grown people to be surprised at the mistakes of schoolboys. "*Nobis enuncias*," for "*nos enuncias*," seems a very bad mistake to a teacher of French, and yet this blunder has been made by a man who was at *Lyons* the superior of the school boy—Sir Archibald Alison.

I would here point out the importance of our keeping a copy of every paper we ourselves have set. If these papers are arranged chronologically, they will afford us a rough autobiographical sketch of our teaching. We shall see the kind of thing that used to interest us, and then how our interests and our efforts changed. Perhaps an old examination paper will remind us of an enthusiasm which we would gladly revive, perhaps of an error from which we have fortunately got clear. But I am speaking now of examination papers set with such care that they are, or if were the shadow of, our teaching.

No time remains to discuss, as I had intended, the best way of setting papers in some other subjects. I have not had so much to do with the teaching of history and geography as I have with the



teaching of languages, and I have not set many papers, or "testers" in these subjects. But when I look at the papers, set by other people, I am sometimes a good deal perplexed. I cannot make out how the examiner settles the question of marks. Here, for instance, is a question from one of the Oxford or Cambridge Junior papers—"Draw an outline map showing the coast line of Europe from the mouth of the Danube to the mouth of the Rhine, and mark the chief rivers and chief ranges of mountains between those two rivers and the coast." The last words—"the coast"—do not very clearly convey the examiner's meaning; but putting the fault of ambiguity aside, I can't help thinking that some boy or girl might spend half the time allowed for the whole paper in drawing this outline map of Europe, and yet probably not more than one-eighth or one-tenth of the total marks would be awarded as the maximum for it.

Let me read you a History paper, set at this same examination for the junior candidates. The time allowed for the paper was one and a-half hours. The period that had been specially prepared was 1488 to 1660:—

"1. Give dates of the deaths of the sovereigns of England from Henry VII. to Charles II.

"2. Determine as nearly as you can the dates of the following events, and give names of the persons principally connected with them: Martyrdom of Ridley, Bishop of Worcester; Trial and execution of Strafford; Assassination of Buckingham; Completion of authorised version of the Bible; Capture of Montrose.

"3. What were the most important events in the reign of Elizabeth?

"4. Write a short life and character of Cromwell and of Oliver Cromwell. [What, by the way, is a *short* life? As a long life would fill a large volume, I suppose a short life might fill a small volume. Anyhow, "shortness" must be relative, and the examiner gives no scale to fix its meaning here.]

"5. Who were the principal literary persons who lived in this period? State for what they were each remarkable. [There's an easy question for you, anyhow. Full marks, I suppose, would be given for such answers as this: "Shakspeare, remarkable for plays; Bacon, remarkable for philosophical works and for taking bribes; Milton, remarkable for writing poems and for being blind."

"6. Describe one of the following events:—Guy Fawkes's Plot; Battle of Naseby; Trial of Charles I.

"7. Mention any facts and dates which particularly struck you in the study of the history of this period.

"8. Discuss the causes and results of the Great Rebellion, or the differences of English life and manners at the present time from what they were at any period from A.D. 1488 to 1660."

This last question, at the end of an hour and a-half paper for young people under sixteen, almost takes one's breath away. "Discuss the causes and results of the Great Rebellion; you have at least five minutes left yet!" What remarkably clever young people must go in for these examinations! I heartily wish one of them were here to-night, and in my place. He or she might then discuss, in the five or ten minutes more during which you might consent still to remain listeners, all that I should like to discuss with you—the best way of discouraging cram; the best system of marks; and (difficulty

of difficulties) how to equate marks in such a way that each subject may have its fair share, and no more, in settling the result of the examination. But young people now-a-days must be much cleverer than we were, or we must have sadly degenerated. Any way, I despair of discussing even the easiest of the subjects I have now named, so I must leave the matter in your hands; and if I have, in legal language, "made out a case for inquiry," I trust that some one else will inquire, and that I shall have the pleasure of coming some other Wednesday and listening to the results.

Mr. Must quite agreed with the lecturer, that in the setting of examination papers too much stress was generally laid on trivialities and exceptions; whereas what was wanted was to see that the essential parts of the subject were understood and remembered; in language, the main rules of grammar, rather than the little used exceptional forms. For the award of prizes, &c., in the school, he thought it best that the teachers themselves should examine, rather than an outside examiner, who could hardly be expected to be able to follow closely the lines of the teaching, and determine the extent to which individual pupils had profited by it. In regard to the proposition to set the special book only a comparatively short time before the examination, he was of opinion that there was little enough time already allowed to thoroughly master the books prescribed for the University Local Examinations, and that to curtail the time would tend directly to encourage "cram." In translating he had found it a good plan to give the pupils at the outset an idea of the subject matter.

Mr. Belcher expressed some surprise that mathematical papers had not been touched upon by the lecturer, for if there was a subject in which knowledge could be fairly tested by paper work it was mathematics. As to the time it took to revise and mark the pupils' answers, he considered that an experienced examiner could get through a good deal of work in a comparatively short space of time, and without risk of doing injustice to the examinees. He did not himself see the utility of dividing the papers into sections and subsections as a means of preserving uniformity in the standard.

Mr. Thorpe observed that the remarks of the lecturer had been confined to school test examinations, and that the subject of public examinations for certificates had not come under consideration. The examiner, he thought, had a higher function than that of a mere tester; good papers could teach something to the teachers themselves. In the answers of candidates at a large public examination there was often found a singular concurrence of error, showing that false methods were employed in many schools. The lecturer had given some good hints respecting the setting of papers, such as the advisability of jotting down what were found to be effective questions, as they were met with in the course of teaching; and time and thought were undoubtedly required in the construction of an examination paper. Catch questions were in all cases to be deprecated, the object being to test the pupil's knowledge of essentials.

Mr. Langer thought that the complaints against the working of examinations were often due to the employment of young and inexperienced examiners, who had little sympathy with children, and an imperfect estimate of their capacity of acquiring and retaining know-



ledge. In setting a paper regard ought to be had to the antecedent conditions: where special portions of a book or subject had been prepared, the questions would naturally be of a more minute character, than if the whole subject had to be tested. Attention would also be given to the form and order of the questions. At certain examinations the paper was divided into a number of sections, each containing several questions, one only of which was to be answered. Uniformity in the method of marking was hardly to be expected. One examiner would assign a different proportion of marks to different questions, another would distribute the marks equally; one would mark simply for knowledge, another would lay more stress on the form. His own plan was to allow extra marks for the style of the answers.

Mr. Spratling had found that in school examinations the younger masters almost invariably set too difficult papers; apparently deeming it necessary thereby to impress their pupils with a due sense of their own superior knowledge. He thought that where the examiner assigned more marks to one question than to another, it would only be fair to give notice of the fact, by stating at the end of each question the number of marks it would carry. Thus the examinee would not waste too much time on the less important questions, and would give his answers more in accordance with the ideas of the examiner. The earlier questions in a paper might be on the groundwork of the subject, and these should be made compulsory. It would obviate some difficulties in the awarding of marks, if the questions were broken up into portions, which would require separate answers.

Mr. Magnus said that in the case of an inspectional examination of a very large school, where, as was usually the case, but a very short time could be allowed for the report, it was usual to employ the teaching staff in the revision of the papers. He could not say that the results were altogether satisfactory, but it could hardly be avoided. In regard to the setting of the papers, he was disposed to recommend that the teachers should furnish a number of questions from which the outside examiner might select, and add to at his discretion. In order to secure a uniform standard in marking the papers, it would be well to look over a certain number before beginning to mark them at all; and, in the case of a competition for prizes, to look over the best papers a second time. Some examiners, on the contrary, made it a rule never to look at a paper twice, conceiving that the first impression would be the true one. He could not say that he approved of this plan. As to the principle of awarding negative marks, i.e., deducting marks for very ignorant and absurd answers, he thought that most examiners would unconsciously be led to do this.

Professor Foster thought that examination papers should be short so as to allow time for full answers; whereas a long paper, affording much latitude of choice, would tempt the pupil to "nibble" at a number of questions to very little purpose. In drawing up a paper, the examiner should always formulate for himself the answer he would expect to each question. He was not in favour of giving the marks assigned to the separate questions, as it ought to be apparent from the questions themselves, which would carry most marks. For preserving the standard, it would be found useful to note certain types of answers, and to keep them in view during the revision.

Mr. Storr said that the question of who should be the examiners was certainly a very difficult one. His own experience of the working of the plan of setting the masters of a school to examine other than their own forms was not very satisfactory; and he gave some instances where an absurd system of marking by an outside examiner produced the most fallacious results.

The Chairman was inclined to recommend a dual examination, by the teachers of the school as well as by outsiders, and considered that *vis-à-vis* questioning was essential to bring out a true result. Uniformity in the marking might be secured by selecting certain papers as standards of reference.

After a few remarks from Mr. Quick in reply to the different speakers, a vote of thanks to the lecturer concluded the proceedings. —*The Educational Times.*

### ORTHOGRAPHY IN RELATION TO ETYMOLOGY AND LITERATURE.\*

BEFORE the invention of printing, people spelled as seemed best in their own eyes. There were not many writers, but those who wrote were more or less learned men like King Alfred, or the scribes of King Henry III.'s council; of whose orthography I give examples in the Appendix, Nos. I. and II. These two old pieces of English, exactly transcribed from contemporary manuscripts, are there transliterated into a species of writing called Engytype, (that is, "approximate printing," from *εγγύς*, near.)† showing the pronunciation of the period as determined in my "Early English Pronunciation." Immediately afterwards I add a barbarously literal verbal translation, showing the modern forms of the words, also engytyped in my own modern pronunciation, so that the change is visible to the eye as well as audible to the ear while I read out the passages. You will observe that these learned men spell systematically on the whole, but some of them had orthographical crotchets, like many, perhaps most, of our scholars at the present day, and thought they could force the obstinate Latin letters to give a still more systematic representation of local speech. The earliest English writer of the class, and one whose original manuscript exists in Oxford (Bodleian Jun. MS. 1), was a monk of the 12th century, called Ormmin, or by contraction Orm, who put the whole of the New Testament history into very fluent unrhymed verses of 15 syllables, with a systematic orthography, probably representing the refined East Anglian dialect of the period. Of this orthography he was very jealous, as will appear by the injunctions to those who should copy it—which did

\* A Paper read by A. J. ELLIS, Esq., F.R.S., before the College of Preceptors.

† Engytype was invented exclusively for philological purposes, but it serves to illustrate the feasibility of phonetic writing, without clashing with any other alphabetical system. No capitals are used, but their presence is indicated by a prefixed period. The vowels *a, e, i, o, u*, have their Latin sence, as in father, there, machine, old, rule; and *y, æ* are the French *y, œ*, while *æ* (rounded *e*) gives the short *e* in *eat*, or *a* in *glad*. The letters each represent several shades of sound, which are distinguished when necessary by accents, as *ā* in *man*, *i* in *ask*, *a* in *father*, *a* deeper Scotch sound, *d* in *dl*, and so on. Long vowels are doubled, short are single; thus, *mān, dsk, faadhu, dāl*. The *r* is not written when not pronounced. Among the consonants observe *j, q* for *y* and *ny* in young = *jey j* and *dh, zh* for *th*, and *s* in the vision = *dhs* vision.

not come to pass for six hundred years, when, in 1852, Dr. R. M. White very carefully edited the "Ormmulam," so called by the author after his own name (Oxford, 2 vols. 8vo). Orrmin's principle was to indicate a short vowel by doubling the following consonant, and a long vowel by leaving either no consonant or only an undoubled consonant after it. You will see what he says, and how he wrote by referring to the Appendix No. III., where the adjacent engytype marks the pronunciation. I have not thought it necessary to add a translation.

Orrmin, therefore, had a very strong opinion as to orthography considered as "right writing," although his opinion differed materially from that held by other authors. Some two centuries later we have another manuscript by a good old monk of Canterbury, Dan Michel's "Ayenbite of Inwyt," or Remorse of Conscience (edited by Dr. Morris for the Early English Text Society, 1866). This author essayed to write in the Kentish dialect for a reason set forth in rather hobbling rhymes, but he was also clearly very particular in his orthography, which we fortunately possess in apparently his own handwriting. These rhymes are also given in the Appendix No. IV., and furnished with a transliteration giving the pronunciation.

This was in 1340, and for another hundred years writers had the liberty of free spelling, though it was certainly becoming vague and unsettled through the whole of the fifteenth century. But then the language was itself changing from middle English, in which Orrmin and King Henry III.'s council wrote, to modern English; and it was no wonder that scribes hesitated about writing when they had hardly made up their minds about speaking. But a great power was at hand. Exactly four hundred years ago, in 1477, William Caxton published at Westminster, "The Dictes and Sayings of the Philosophers," the very first book of which copies were produced in England by that wonderful civiliser—the printing press. The letters imitated the handwriting of the day, and the spelling that of the scribes who had been previously employed. But the first book printed in English, though written by Caxton, was not printed by him. In the Appendix No. V., I give a short extract from this first printed English book, with the engytyped pronunciation of the following century, that of Spenser and Shakspeare, because the transitional pronunciation of the fifteenth century is very uncertain, and we have numerous writings which explain that of the sixteenth, in which modern or new English fairly began.

Henceforth spelling ceased to be that of the author, and became that of the printer, or printer's reader. Letters were types to pick up, and pick up as quickly as possible, for printers are paid by the thousand of the types they can "set." To facilitate this mechanical process, it was necessary that they should know at a glance what the word was, and what boxes their fingers should go to, without having to study the author's selection of letters. Copyists had done much the same when they wrote, as usual, from dictation, and sometimes did worse by copying in their own dialect, instead of the author's. Writing, however, was slow work, and was often done unconsciously. Dipping into boxes for letters had to be done quickly, and at the same time, consciously. A word becomes to the compositor a mere collocation of types. Of course the early compositors were inconsistent. Different men, and even the same men

at different times, picked up different letters for the same word. But as years went on, the importance of an exact knowledge of the letters in a word was more and more felt. To follow the author's spelling became more and more of a nuisance. At the present moment, as I know from unpleasant experience, large printing offices systematically disregard the author's spelling and punctuation, and substitute "the custom of the house." And thus each "house" manages to be uniform, but the "houses" as a body are by no means uniform.

Already in the middle of the 16th century writers cropped up who wished to use what they considered a more rational system of spelling, founded on something above manual dexterity. In 1568 Sir Thomas Smith, in 1569 John Hart, Chester herald, in 1580 William Bullokar, and, (although their books were actually printed in the 17th century, yet belonging to this period,) in 1619 Dr. Alexander Gill, and in 1633 Charles Butler, proposed their various improvements. Printers were found to print these works—for a consideration. But no printer thought for a moment of using their orthographies on his own account. I have, however, been personally much indebted to these writers, for without their help supplemented by the labours of William Salesbury, (who preceded them all, and in his "Dictionary in Englyshe and Welshe," in 1547, transcribed a considerable number of English words into Welsh letters,) I should never have been able to discover that the English of the time of Shakspeare differed so materially in sound from that in our own day. In the present century, and indeed in the present year, we have not only one or two, we have very numerous proposals for modifying our spelling in whole or in part; and even the School Board of London have thought fit to agree on a memorial to be presented to Government petitioning for a Royal Commission to consider the subject. The reason that moves such a body is the bitter experience that our present orthography requires almost as long an apprenticeship as the compositor himself receives, before pupils can become thoroughly familiar with it, so that symbol and sound should be indissolubly connected in their minds, and reading and writing become almost as unconscious operations as their correlatives—hearing and speaking.

Whenever any such proposal is made, one stock objection is raised. *Change will ruin the language, deface literature, and wipe out all record of etymology.* These are very sweeping assertions, and those who have given serious attention to the subject for many years, feel astonished that any person of ordinary intelligence and linguistic attainments could commit himself to such statements. But they are not made by foolish people who know nothing of language. They are made even by people whom we are accustomed to respect for their attainments.

Phonetic Spelling, said Archbishop (then Dean) Trench, in his *English Past and Present*, (1855, p. 203) would occasion "the loss in so many cases of all which visibly connects a word with the past, which tells its history and indicates the quarter from which it has been derived. In how many English words a letter which is silent to the ear is yet most eloquent to the eye—the *g*, for instance, in *deign*, *frign*, *reign*, *inapugn*, telling us it does of *dignor*, *fungo*, *regnō* and *inapugnō*; as the *b* in *debt*, *doubt*, is not idle while it tells of

*débitum* and *dubium*. At present it is the written word which is in all languages their conservative element. In it is the abiding witness against the mutilations or other capricious changes in their shape which affectation, folly, ignorance, and half knowledge would introduce. It is not indeed always able to hinder the final adoption of these corrupter forms, but does not fail to oppose to them a constant and often a successful resistance. With the adoption of phonetic spelling, this witness would exist no longer."

At the Spelling Reform Conference, held on 29th May 1877, at the Rooms of the Society of Arts, the chair was taken in the morning by Prof. Sayce, Deputy Professor of Comparative Philology at Oxford, and in the evening by Dr. Morris, late President of the Philological Society, whose *Historical Outlines of English Accidence*, and *English Grammar*, and numerous editions of Early English writings, show that he at any rate knows something of English Philology. The meeting was also addressed by Mr. Sweet, the present President of the Philological Society, by Dr. Murray and myself, both Vice-presidents of the Philological Society; and there was perfect unanimity of opinion, among these four gentlemen and myself, not only as to the utter groundlessness of such assertions as I have just cited, but as to the absolute necessity of phonetic knowledge, and at the least of a phonetic orthography in addition to that now in use, (like the Engtype of my Appendix, for example), to obtain even a partial insight into the history and etymology of our language. Prof. Max Müller has written very strongly to the same effect in the *Fortnightly Review* for April 1876.

When two such entirely and distinctly opposite opinions prevail, it is worth while to go back a little to first principles, and attempt to discover some grounds in the history and use and capabilities of orthography to represent language in its literature and in its etymology. This is what I wish to do this evening to a small extent, without any view to the introduction of a new orthography, of which however I would not disguise that I have been an earnest and consistent advocate for more than thirty years, and in pursuit of which I have made large sacrifices of money, of time, and of health.

(To be Continued.)

### PROFESSOR MORLEY ON SHAKESPEARE'S PLAYS.

FAMILIAR as they are,—familiar to many as the sunshine,—they owe their power and their beauty to a union of hidden forces that no eye finds at a glance. The labourer who sits in the sun by the stone seat before his door enjoys the splendour of noon and pomp of the sunset, knowing nothing of the mysteries of light. Like sunshine and the pleasant air of heaven, stories as Shakespeare tells them come home to us all—delight alike the simple and the subtle. It needs no philosophy to find enjoyment in scent, form, and colour of the rose; but shall we say, therefore, it is but a rose, and there is little reason for its harmonies? Many who find enjoyment in that chief product of nature, a work of the highest human genius, are nevertheless apt to slight all search below the surface for the reasons of its charm. But Shakespeare, supreme among artists, if he wrote with ease, wrote also with patient thought and care, of which the traces became more and more manifest as he rose to complete

mastery. From the level indicated by the illustrations we have given of the plays from which he drew his early stage experience, Shakespeare gradually raised the drama to the highest point it has reached, or is likely to reach, in the literature of the world. He had all the earnestness of his time; he sought, as every great English poet has sought, to "delight and teach," but so to teach that those who fall under his spell shall find in him a genial companion, not a pedantic moralist; the wisest, indeed, of comrades, but no school-master. Shakespeare's first requirement, when a play was to be written, was that it should tell an interesting story. . . . But what is it that makes a story interesting? To interest us, it must come home to us. To interest many men in many generations, or in all the generations, it must touch some principle of life common to all men; something within our natural lives that answers to the touch to-day as it answered yesterday, and will answer for ever; something that lies far deeper than any fashion of a century. The story that is to interest the learned and unlearned, rich and poor, Jew and Gentile, all men as they are simply men, must deal with some one of the universal and enduring truths of life. There is clear evidence in his plays not only that Shakespeare knew this, and chose his stories accordingly, but also that, when he had chosen a story, he distinctly asked himself which of these great elementary truths was chief in it, and then deliberately—with a design of which the evidences become unquestionable when they are found—so planned and wrote as to make that truth everywhere the felt but unseen soul of his story, giving the charm of a true spiritual unity to all its movements. Shakespeare was deeply religious; but, in religion, as in everything else, his genius used the accidents as accidents, and laid foundations for his pictures of life only in essentials. The religion of his plays may almost be summed up in the words—Love God; love your neighbour; do your work. In one form or another, he constructs his plots with an underthought that in the fulfilment of these three duties lies the solving of all problems that can vex the heart of man.—*Library of English Literature.*

### REPORT ON THE MADRAS FREE CHURCH INSTITUTION AND COLLEGE.

MEMORABLE as the year 1877 will be in the annals of Southern India for struggles extending over a wider area than we are called on now to survey, it will also be memorable within the narrower sphere of education and missionary enterprise. The famine of the year that is past, bringing disease and death in its train, enhanced the difficulties incident to the managing of a work which has at all times so many that are peculiar to itself. But, as in all our experiences of life, judgment is mingled with mercy, we thankfully record that our case might have been much worse than it was; for during that terrible year there was a remarkable exemption in the teaching staff from serious or lengthened sickness. There have indeed been changes in the staff of the college, but these have not been due at all to the presence of this national calamity.

In March, soon after our last anniversary meeting, the Rev. William Miller, the Principal, had to seek in Europe the restoration of

health which by long and laborious work here had been considerably shattered. It was his intention to return within about eight months of his departure, but it is hardly surprising to those who saw him that he was then, to find that now he is forbidden by medical authority to return to Madras until the beginning of another cold season. To Mr. Miller this enforced absence is not by any means welcome; but it is satisfactory to know that, though absent from the college, he is able to do for it at home work which may be even as valuable both now and hereafter as the good service he has been so long accustomed to render within its walls.

The Rev. R. N. Macdonald was recalled for conference with the Committee and left Madras on the 28th of January last.

In the last report it was stated that, owing to the great increase of numbers in the College, especially in the first class, we had secured the services of the Rev. G. Patterson, of the Wesleyan Mission for part of his time. It is gratifying to be able to report that through the kindness of the Wesleyan Methodist Missionary Society, he is this year to be on our staff for full time; and the College Council would point to this fact as an indication of the wide Christian basis on which the College now stands, not being confined in its teaching or its local management to any one denomination, seeking to be as far removed from sectarianism on the one hand as from mere secularism on the other.

We expect in the course of the year the arrival of a new Professor, but as his appointment has not been officially announced to us as yet, we need not further refer to it.

The Council would express its thanks to the Assistant Professors, Teachers and Pundits, who have worked well during the year; and to the many friends who have assisted us in the way of conducting written examinations—a service all the more valuable because of the large size of most of our classes.

The attendance, as has been said, especially in the College, was at the beginning of last year unusually large. The average for the school throughout the year was 829 and for the College 225. On the 31st of December the rolls of School and College showed an increase of 19 and 35 respectively as compared with the previous year's roll at the same date and to-day they show a numerical strength of 875 and 242 respectively—in all 1,117. From these figures it might appear as if the famine had not at all affected our numbers for the worse. But this would not be strictly correct; for at one time the roll of the College contained 245 names and by the end of the year it was reduced to 202. This is a very unusual falling off in the senior department where greater steadiness than in the school might be expected on the part of the students; and, on making an analysis of these withdrawals, we find that most of them were from the first class. No doubt some of these students had not at the outset counted the cost of labour as well as money before entering on a college course, but we believe that the cause of withdrawal in most cases was due directly or indirectly to the famine. Besides causing so many withdrawals, the famine in a most marked degree affected the Institution last year in the matter of the daily attendance. It may be sufficient simply to state that the percentage of absentees was about double of what it was in 1875, being fully 12 per cent. on the average for the whole year and still more, we regret

to say, in the College, if we were to reckon it separately. There were no doubt other causes of irregularity, but we believe the famine was the principal cause of the great increase of it.

With reference to the public tests to which our work or at least part of it is subjected, we may mention first of all the Peter Cator Examination in religious knowledge. The success of our boys on last occasion was rather below than above their usual average. In the Lower Grade ten certificates—which are given only to such candidates as gain half of the maximum number of marks—and, in the Higher Grade, two prizes and six certificates fell to their share.

Mr. Fowler, the Inspector of Schools, visited the Institution early in March last year—a rather unsuitable time as the classes had been but recently organized for the Session. The Director of Public Instruction on a review of the Inspector's report says:—"This report shows that the Free Church Central Institution is as regards numbers in a highly flourishing condition. The Institution distinguished itself in all the University Examinations. The result of Mr. Fowler's inspection in certain subjects and classes was very satisfactory while in others there were some failures."

In the University lists of 1877-78, the College has taken as usual a respectable place. At the Matriculation Examination the number that passed was 32 of whom 2 were in the first class. As compared with last year it might seem that there is now a great falling off, but the reason for the exceptionally large number that passed in 1876 was explained in last report and the number that passed this year is about the average of recent years. At the First Examination in Arts 29 passed, of whom 3 were in the first class and one of the three at the top of the list. Upwards of 30 went up to the recent examination for the degree of Bachelor of Arts but the results have not yet been published.\* The number that passed last year was 13, one of our students, who is now one of our christian teachers, standing alone in the first class.

The annual increase in the number of men who receive University distinctions is not looked on with satisfaction by all, for the alleged reason that a number of educated persons are thus coming forth who can find no suitable employment and who therefore breed only an element of dangerous discontent in the community. Now, in a college like ours where the highest (or B.A.) classes have till lately been small and which cannot count graduates of more than ten years' standing, it is still possible to trace the post-academical history of every one of them. The result of an investigation made in the course of last year showed that they could all be satisfactorily accounted for. About half of the whole had given themselves, whether permanently or temporarily, to the profession of teaching, and we believe that in this profession alone there is ample and honourable scope for a larger annual supply of graduates than the University is accustomed to furnish it with. Two, we were glad to notice, were students in the Civil Engineering College, one of whom has just obtained the Bachelor's degree in that faculty. The others were for the most part employed in Government Offices. It is indeed to be regretted that so few of these educated young men betake themselves to independent lines of work, or to the practice of the learned

\* The list of successful candidates, published since this report was in type, adds eleven names to the number of our graduates.

professions. Only one of the graduates of this College is as yet engaged in the independent practice of law, none had given themselves to the profession of medicine, and none of our native christian graduates have as yet devoted themselves to the ministry of the gospel.

The total income of the Institution and College for the past year may be put down at Rs 53,571 and arranged under the following heads in the order of magnitude:—

(1). The usual grant from the Church at home (including £300 from the Church Missionary Society and the same sum from the Wesleyan Methodist Missionary Society) has been this year increased by £200 and amounted with exchange to Rs 21,951 or nearly 41 per cent. of the whole.

(2). The fees paid by the pupils and students amounted in all to Rs 18,656, being about 35 per cent. of the total receipts for the year. The fees have thus come to bear a very appreciable proportion to the rest of our income and may be expected to do so in a still larger measure next year owing to the introduction of a new scale of fees recently sanctioned by Government to be in force throughout the Presidency from the 1st of January 1878. We confess it was not without some misgiving that at the close of a season of famine—which must always leave a large amount of poverty and debt behind it—we announced that the rate of fees would be increased; but it is perhaps a proof of the ripeness of the case for such a change that there has been on the whole no falling off in the attendance; and, if no unforeseen calamity occurs, the amount at the end of this year will form a still larger proportion of our income.

Even last year the collection of fees was greater in amount than ever it had been before, being in round numbers about Rs 2,000 in excess of 1876. The greater part of this increase was due to the College, but owing to considerable additions to the teaching staff and partly also to the falling off in the number of students, already noticed, the proportion of the total outlay on that department borne by the students themselves, though still far above the average in other Collegiate Institutions throughout the Presidency, fell off by about 2 per cent., being 28 against 30 for the last two years. The fact, however, that this proportion, barring the case of this exceptional year, is steadily growing, is one that must be gratifying to Government as well as to other friends of aided education.

(3). The third source of our income is the grant-in-aid from Government which amounted to Rs 10,040 and forms nearly 19 per cent. of our whole income. We have long felt that while the grant made on account of the school department is sufficiently liberal, the grant to the College is far from adequate.

(4). Under the head of miscellaneous receipts about 5 per cent. of our last year's income must be reckoned; and here we have to acknowledge with special gratification a contribution of Rs 2,028 from the students of the Free Church Theological College in Glasgow. It is valuable not only for the substantial addition that it makes to our funds but for the interest in Foreign Missions generally and in the Madras College in particular which led so many of the young ministers of the Church to circulate information as well as to collect money to promote the work which we all have at heart.

Before closing this report it may be well to make a statement in

regard to the amount of time and attention given to religious instruction. In each class in the school, one hour a day—and this generally the first hour or at any rate a morning hour—is devoted to the reading and study of the Bible. Thus five hours a week are given in the school to this work and the same rule holds in the college with this modification, that a few years ago it was found expedient to require a smaller number of hours from the students in the college, in order that they might have a little more leisure to work for themselves and that the Professors likewise might have more leisure to do home-work. The result of this is that in the college the Bible is taught for four hours a week. In other words, while in the school one-sixth part of the whole teaching time is given to direct religious instruction; in the college the proportion is one-seventh. And this arrangement is carried out from January to December in all those classes whose work lasts till the beginning of our usual christmas vacation. It always happens that two of the classes, viz., the sixth in the school and the second in the college get leave of absence about the first of December, by which date their school examinations have ended and the University examinations are soon to begin. It is thought advisable to let these boys have relaxation for an hour or two daily from class routine during part of November, to prepare for the school examinations; and, if there is any reduction of the amount of Bible-teaching at such a time, it is only in proportion to that made in all other subjects.

There has been in connection with the Institution since its commencement a Sabbath School where religious instruction only is given. It is attended by boys of the school-department, who are urged but not compelled to be present and the average attendance is 333.

In conjunction with the direct inculcation of Christian truth, much is done by us indirectly. Not to speak of the fact that in expounding the works of Shakespeare, Bacon, or Milton, one has often to deal with the words of Scripture or the contents of Revelation, there are few subjects of the course where opportunities do not occur for the elucidation or enforcing of Christian ideas. To present in their true relations to the kingdom of God the ordinary affairs of daily life, the events of political history or the ascertained results of science, is a service to religion anywhere and in any age; but it is so specially in these days when so much of the literature, philosophy and scientific speculation imported into this country is inimical to true religion; especially too in India, where the idea of a living personal God is so little understood and so much darkened by a veil of custom, ceremony and superstition. Efforts are habitually made to realize such aims as these, to view every subject of the course from the Christian stand-point and to infuse into the whole the spirit of the Gospel of Christ. How far short we come of fully translating this our ideal into the actual, none are more deeply sensible than ourselves; but there are not wanting proofs that our labour is not in vain. There is a great diffusion of christian knowledge among the people; there is an increasingly intelligent comprehension of what Christianity is; and there are signs that the idea of a living God is taking possession of the minds of those who have been taught to learn His Word. May these signs be multiplied and deepened and may the students who wait on our teaching have in an ever increas-

ing measure as the basis on which all their learning is built, that rich experience which the Hebrew seer set forth in his own simple strain when he said that "the fear of the Lord is the beginning of wisdom."

#### MISCELLANEOUS.

THE ENGLISH CONQUEST OF INDIA.—England never will permit at any cost that any Power in Europe shall interfere with her direct access to India. I have no sympathy with the language of those who talk with bated breath about conquests in India. We are not ashamed of our conquests in India. We do not require that any excuse should be made for the men who made those conquests. We are proud of the men who conquered India for us, and we are proud of the great Military and Civil services by which that empire has been so successfully governed. There is no sacrifice which this country would not make for the maintenance of our dominion in India, because it concerns their pride and their honour, and almost think I may say, because of the conviction which they might justly entertain—which I held in the strongest way—that the conquest of an inferior by a superior race is not an evil.—*The Duke of Argyll.*

It is useless to gather treasures if we cannot store them, and to learn what we cannot remember. Happily, of all mental faculties memory is that one which is most certainly improved by exercise; besides there are helps to a weak memory such as do not exist for a weak imagination or a weak reasoning power. The most important points to be attended to in securing the retention of facts once impressed on the imagination, are (1) The distinctness, vividness, and intensity of the original impression. Let no man hope to remember what he only vaguely and indistinctly apprehends. A multitude of dim and weak impressions, flowing in upon the mind in a hurried way, soon vanish in a haze, which veils all things, and shows nothing. It is better for the memory to have a distinct idea of one fact of a great subject, than to have confused ideas of the whole. (2) Nothing helps the memory so much as order and classification. Classes are always few, individuals many, to know the class well is to know what is most essential in the character of the individual, and what least burdens the memory to retain. (3) The next important matter is repetition: if the nail will not go in at one stroke, let it have another and another.—*Blackie.*

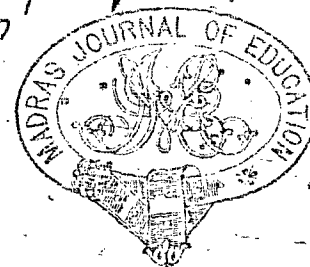
#### APPOINTMENTS, &c.

Mr. W. Sconce, Head Master, Zillah School, Cuddalore, has been permitted to return to duty by the Right Honourable the Secretary of State for India.

The Director of Public Instruction has granted leave of absence to P. Ranganatha Mudaliyar, M.A., 1st Assistant, Provincial College, Combaconum, from 20th June to 19th July 1878, under Section 9, Supplement F. of the Civil Leave Code.

Mr. J. B. Bilderbeck, B.A., First Assistant Provincial College, Rajahmundry, has passed the prescribed test in Tamil.

Mr. J. B. Bilderbeck, B.A., has been granted one month's leave on sick certificate.



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#### THE MONTH.

The following is the List of Examiners appointed by the Syndicate to conduct the coming Examinations of our University:—

#### MATRICULATION EXAMINATION, 1878.

| LANGUAGES                           |                  |
|-------------------------------------|------------------|
| J. Cook, Esq., M.A.                 | General.         |
| J. B. Bilderbeck, Esq., B.A.        |                  |
| Rev. G. Patterson.                  |                  |
| G. Bickle, Esq.                     |                  |
| Rev. D. W. Kidd, B.A.               |                  |
| R. Harvey, Esq., M.A.               | Text:            |
| Rev. K. M. Banerjee, LL. D.         |                  |
| R. B. Michell, Esq., M.A.           | Persian & Urdu.  |
| Rev. G. Sell.                       |                  |
| S. Seshayya, B.A.                   | Text and Grammar |
| J. M. Velu Pillai.                  |                  |
| S. Ramaswami Mudaliyar, M.A. & B.L. |                  |
| P. V. Ramaswami Raja, B.A.          | Translation      |
| V. Vasudava Sastri, B.A.            |                  |
| S. Rangayya Chettiyar, B.A.         | Telugu.          |
| A. Subba Rao, B.A. & B.L.           |                  |
| M. Ciapham, Esq.                    | Kannaree.        |
| R. S. Sheppard, Esq., F.A.          |                  |
| N. Achyuta Nayar, B.A.              | Malayalam.       |
|                                     |                  |

instruction in the third classes of our schools would be ashamed to own them.

II. *Imperfect notions of the general principles of grammar.*—Not one candidate obtained full marks for *paraphrasing* or *analysis*, although several made fair attempts to answer those questions and obtained a high percentage of the marks assigned to them. In *paraphrasing*, the etymological distinctions of words were generally correctly given, but in giving the *force* of a word and the *relation* that one word bore to another in the sentence there was an almost general failure. In *analysis* also, sentences of easy construction were correctly analysed, but two sentences of somewhat difficult construction were generally slurred over. It may be inferred from this that the candidates who appear for this examination leave school before their knowledge of grammar has been completed, and that, subsequently, they pay little or no attention to the subject.

III. *Apparent want of practice in writing composition.*—I am afraid that the majority of the candidates never attempted composition as an exercise till they sat down to it in the examination hall. It is true that no proper standard has been settled on for Malayalam prose, nevertheless, a certain amount of practice in composition must give a native some facility in expressing his ideas in a form both readable and elegant—without writing crudely and repeating ideas regardless of the context, defects which were rather common in the composition papers I had to examine.

IV. *Synonyms indiscriminately used and explained.*—The vernaculars abound in synonyms. It is necessary for the sake of accuracy of thought and expression that students should learn to differentiate the more commonly used synonyms as is done in English. A careful study of the popular usage of terms will help students to do this.

The following extract from "The Potter's Song" in Longfellow's lately published *Keramos* illustrates the last stanza in his Poem of *The Village Blacksmith*, which contains the grand truth that our daily lives gradually form our characters for good or evil. As Goethe says—A character is formed in the stream of the world :—

"Turn, turn, my Wheel ! What is begun,  
At daybreak must at dark be done,  
To-morrow will be another day ;  
To-morrow the hot furnace flame,  
Will sear the heart, and try the frame,  
And stamp with honor or with shame  
These vessels made of clay."

"The plain vase, the Persian adorned with amulets and jewels." The Persian here referred to by Longfellow is XERXES, and not CYRUS as by a clerical error on page ix of our notes is made to appear. The supplementary note on page lxi is correct. The passages in Herodotus and Aelian in which reference is made to the incident are given in that supplementary note.

H. H. THE FIRST PRINCE OF TRAVANCORE'S TRANSLATION PRIZE.—Forty-three candidates sent in Translations in competition for this Prize. The adjudicator, Mr. E. Thompson, the Principal of the Presidency College, had no hesitation in determining the best translation to be that sent in under the motto "*Hoc opus, hic labor est*," the writer being Mr. David Kuriyan of the Government Normal School, Calicut. To him therefore the task of making the translation for the prize is assigned, and on the satisfactory completion of the work the prize will be awarded.

TEACHERS' CERTIFICATE EXAMINATION.—The Acting Director of Public Instruction has given notice that an examination of Candidates for Teacher's Certificates under the Grant-in-Aid Rules in force will be held on Monday, the 2nd December next, and following days at the following stations: Ruscloondah, Berhampore, Chicacole, Vizagapatam, Vizianagaram, Rajahmundry, Narsapore, Ellore, Masulipatam, Bezvadah, Guntoor, Kuraoor, Nandial, Cumbum, Bellary, Cuddapah, Nellore, Madras, Cuddalore, Vellore, Chittoor, Salem, Oosoor, Combaconum, Negapatam, Tanjore, Puttucotta, Trichinopoly, Coimbatore, Madura, Dindigul, Ramnad, Tinnevely, Palamcottah, Sawyerpuram, Sachiapuram, Edyengudy and Nazareth. It was currently rumoured for some days that candidates studying privately and not going up from a school receiving a Grant-in-Aid from Government would not be admitted to the Examination. We have made enquiries and have ascertained that there is no such prohibition.—*Madras Times*.

The Board of Oriental Studies at Cambridge has issued a report recommending that natives of India be allowed to substitute at the Previous Examination one or more of the Sanskrit or Arabic classics, or a selected portion of such classic or classics, instead of the Greek subjects required of ordinary undergraduates; and that, instead of the paper on Latin and Greek grammar, they have the choice of a paper on Latin and Sanskrit grammar. The Board states its reason for this recommendation, that it was taken into consideration the difficulties experienced by natives of the East in their preparation for the first part of the Previous Examination. Greek and Latin, the classical languages of Europe, are for the most part entirely unknown to natives of India when they come into residence at Cambridge; such students are, therefore, much more heavily burdened than those who have been habituated from their boyhood to the study of Greek and Latin. It should also be remembered that these languages are in this case acquired merely for the purpose of passing the Previous Examination, and are practically useless to natives of India after their return to their own country. It is quite possible that such students may improve their education by the study of Latin, which at least throws light upon the history of English, but no adequate educational gain is secured by the study of Greek. It appears to the Board that the education of such students might be better promoted by requiring them to take in for examination one of the classical languages of the East—Sanskrit or Arabic—in lieu of Greek. These languages are in general imperfectly known to the students in question, but by virtue of a cognate vocabulary they can acquire either of them more easily than they can Greek, and such an acquisition will be a clear gain to them after their return to India.

|                   |                                  |                                              |
|-------------------|----------------------------------|----------------------------------------------|
| MATHEMATICS       | ...Capt. W. H. Coaker, R.E.      | ...Arithmetic.                               |
|                   | S. Srinivasa Raghava Aiyar, B.A. | ...Algebra.                                  |
|                   | Rev. W. Leeming, M.A.            | } Geometry.                                  |
|                   | C. Waters, Esq., M.A.            |                                              |
| GENERAL KNOWLEDGE | E. B. Powell, Esq.               | } Indian History.                            |
|                   | C. C. Finnagan, Esq., M.A.       |                                              |
|                   | Rev. G. M. Rao, M. A.            |                                              |
|                   | E. P. Metcalfe, Esq., M. A.      | } Physics.                                   |
|                   | C. Nagaji Rao, B.A.              |                                              |
|                   | W. H. Wilson, Esq., Ph. D.       | } Geography, Physi-<br>cal and Gene-<br>ral. |
|                   | C. W. Pearce, Esq.               |                                              |
|                   | W. Morgan, Esq.                  |                                              |

FIRST EXAMINATION IN ARTS, 1878 AND EXAMINATION FOR  
THE B.A. DEGREE, 1879.

|                                           |                                   |                                                              |
|-------------------------------------------|-----------------------------------|--------------------------------------------------------------|
| LANGUAGES                                 | H. B. Grigg, Esq., B. A.          | } English.                                                   |
|                                           | John Bradshaw, Esq., M. A., LL.D. |                                                              |
|                                           | M. R. Weld, Esq.                  |                                                              |
|                                           | Rev. K. M. Banerjee, LL.D.        | ...Sanskrit.                                                 |
|                                           | R. B. Mitchell, Esq., M.A.        | ...Latin.                                                    |
|                                           | Rev. E. Sell.                     | ...Persian & Urdu.                                           |
|                                           | Rev. G. U. Pope, D.D.             | } Tamil.                                                     |
|                                           | V. Krishnamachariyar.             |                                                              |
|                                           | V. Sundararama Aiyar, M.A., B.L.  | ...Telugu.                                                   |
|                                           | A. Subba Rao, B.A. & B.L.         | } Kanarese.                                                  |
|                                           | M. Clapham, Esq.                  |                                                              |
|                                           | R. S. Sheppard, Esq., B.A.        | } Malayalam.                                                 |
|                                           | N. Achyuta Nayur, B.A.            |                                                              |
|                                           | Rev. A. W. Atkinson, M.A.         | } History.                                                   |
|                                           | Rev. C. Cooper, M.A.              |                                                              |
| MATHEMATICS                               | F. S. Evans, Esq., M.A.           | ...Arithmetic.                                               |
|                                           | W. A. Porter, Esq., M.A.          | } Algebra, Trig., Geo-<br>metry and Na-<br>tural Philosophy. |
|                                           | P. Ranganatham Madhaviyar, M.A.   |                                                              |
| SCIENCE                                   | ...Surgeon-Major H. King, M.B.†   |                                                              |
|                                           | E. F. Brockman, Esq., F.R.S.E.*   | ...Physiology.                                               |
| LOGIC, MENTAL<br>AND MORAL<br>PHILOSOPHY. | W. M. Thorburn, Esq., B.A.†       |                                                              |
|                                           | Rev. C. H. Pelly, M. A.†          |                                                              |

M. A. DEGREE EXAMINATION.

|          |                             |
|----------|-----------------------------|
| BRANCH I | ...W. F. Graham, Esq., B.A. |
|          | R. B. Mitchell, Esq., M.A.  |
| BRANCH V | ...Rev. W. Miller, M.A.     |
|          | D. Duncan, Esq., M.A.       |

\* For the F. A. Examination only.

† For the B. A. Examination only.

The Text-Book in English for the Matriculation Examination of 1879 is now ready, together with the Journal Supplement containing full Notes. Particulars may be seen on reference to our advertising columns. The subjects for the English Examination of December 1879, many of our readers will be surprised to learn, are the same as were appointed for 1877. The explanation of this fact is as follows:—the University in that year printed a very large edition of their Text-Book, and by means that by many were thought to be hardly legitimate, tried to force the sale, but still many schools preferred to buy the Edition published by the Madras Journal of Education, and the natural consequence was that some thousands of the Syndicate's books were left lying on their shelves. As it was much to be feared that these discarded volumes would fall a prey to white ants, the Syndicate wisely resolved to rush to the rescue, and to save their books as well as their funds by appointing the same subjects for 1879. Rejoice, ye unfortunates, who go up year after year and fail in English only! The youth who failed in 1877, and again fails in 1878 will again be examined in 1879 in the English subjects of the penultimate year. The selection however has its merits; as far as the English phraseology is concerned, it forms a far better book for the purposes of teaching language than the pieces selected for this year. The prose of Dickens' *Child's History* and of Miss Edgeworth's *Tale of the Little Merchants* is both idiomatic and readable, and this is what cannot be said either of Scott's *Autobiography* or of Cook's *Voyages*. The only serious objection we have heard brought forward against the book for 1877 is that Dickens in the *Child's History* often goes out of his way to make statements offensive and annoying to our Roman Catholic friends. As History should be "a plain unvarnished tale," this is indeed an objection to that part of the text-book.

Mr. J. P. LEWIS, the Head Master of the Normal School, Calicut, in an interesting Report on the Results of the Examination in Malayalam conducted by him in connection with the U. C. S. Test, points out certain defects, which, we fear, too often disfigure the answers not only of Examinees in Malayalam but in the other vernaculars also. These defects are:—

I. Want of neatness and system in committing answers to paper.—In this respect most of the papers were so bad that boys now under



## HINTS TO CANDIDATES FOR EXAMINATION.

Candidates are not allowed to take papers or books into the examination hall. If any one were discovered using, or even having a book, or should he be detected copying from a neighbour, or from a book or paper, he would be immediately sent out of the room, and would probably forfeit all chance of entering the public service.

The time allowed for each paper of questions is seldom anything more than sufficient for a good answer, and it is often too short for the general run of candidates. You must, therefore, take good care to economize every precious moment from the very beginning.

After the candidates are supplied with pens, ink and paper, there is usually a short interval before the questions are distributed. Employ this interval in preparation:—First mark a margin an inch and a half broad along the left of as many sheets as you think you may want by turning down and creasing the paper, and then write your name at the head of each of your answer books. If you defer this last till the moment when you begin to use each book, you are very apt, in your haste and excitement, to omit it; and you will get no credit for any work without your name.

At the head of some of the papers of questions there are "Instructions" which the candidates are to follow in answering. It is of vital consequence that you read these instructions with the most careful attention; many fail because they either read them carelessly or disregard them.

The time allowed for each paper is either printed at the head, or announced by the examiner. Should you have finished your paper before the time, do not give it up till you are obliged. Employ the remaining time in reading over your answers, to check, correct, and improve. Few persons leave an examination hall without having to regret some blunder, the result, not of ignorance, but of over hurry or thoughtlessness. One of the best candidates I ever met, on one occasion, when enumerating the rivers of Asia, omitted the whole of those flowing into the Arctic Ocean; and about two minutes after giving up his papers he was thunderstruck at the sudden recollection of the omission. All such blunders may be in a great measure avoided by a leisurely perusal of the whole paper before giving it up.

If you observe any candidate giving up his papers long before the end of the time, you may rest assured he is answering badly; for it is generally those who have least to say on a subject that have the soonest finished. It may be stated as a rule admitting of few exceptions, that the best men at an examination—those who are full of their subject and cautious in their manner of answering—keep their papers till the very last moment.

You must endeavour to please the examiner, not only in excellence of answering but also in neatness of arrangement.

When you put several answers on one page take care to leave a blank space of an inch or more between each two. Of course you will not forget to place the number of the question in the margin immediately opposite the first line of the answer.

When the answer which you begin in one page is continued on to the next, you should write the number of the question on the margin of this latter page also, opposite where you begin—thus, "No. 6, continued." In this case, too, you should employ a "catch word," that

is, write the same word that begins the second page on the very lowest part of the lower right hand corner of the first.

The paper you get to write your answers on is unruled; and, in order to be prepared for this, you should use unruled paper in all your exercises for some time before the examination.

It will be well for you to bring half a dozen good steel or quill pens of your own into the examination room. You may get bad pens dealt out to you, and we have known a candidate to lose five minutes waiting for a pen to be mended. The loss of this time may probably account for the fact that he failed by only one mark.

When you have much continuous matter to write, as usually happens in Geography, History, Literature, Essays, &c., break up your writing into small paragraphs. I wish writers of books would more generally follow this rule, and they would spare their readers much weariness. A long paragraph is to a reader what a long straight dusty road is to a traveller; but short paragraphs are like the windings of a green lane, that relieve the sense of weariness by a gentle and pleasant variety.

It is not at all an uncommon thing to find some candidate, who has little or no experience in examinations, spend the whole time answering one or two questions at an elaborate length, leaving three-fourths of the paper wholly untouched. This is one of the most unfortunate blunders a candidate could commit, and you must take great care to avoid it.

A certain candidate examined for one of the Government Offices, was an excellent geographer—better prepared in this subject than in any other. One of the questions was, to give a description of three countries—Albania, Pennsylvania, and Egypt. Here was a grand opportunity for showing his knowledge, and he went at the question *con amore*. He entered most minutely on his description, and exhausted all his knowledge of the three countries; but as he spent three-fourths of the time at this one question, he was obliged to leave several others unanswered, all of which were mere child's play to him if he had allowed himself sufficient time. In consequence of this piece of folly, his marks in geography—his *crack* subject—turned out to be very low.

You should first read carefully through the whole paper of questions, making quite sure you thoroughly understand them all. By this careful survey you will be able to measure the difficulty of the various questions, and to know whether you can manage them all. Next make a hasty calculation as to the time you can afford to each—longer or shorter according to the nature of the question—and afterwards confine yourself as nearly as you can to this determination. By this means you will not omit the short questions; and though you may not answer the others at great length, you will, nevertheless, be likely to satisfy the examiner sufficiently on them.

A man sometimes reads the first part of a question attentively enough, till he gathers its general import; then feeling satisfied that he can solve it, he glances hastily through the rest of it, and some important point towards the end, that changes the whole aspect of the question, or makes some considerable addition to it, escapes his notice. Read each question a couple of times, and weigh it well before you begin to answer it. How often it happens that for want of this precaution, a candidate answers, not the question proposed,

## ANSWERS TO THE ABOVE PAPER.

I. The centre of gravity is a point in the body such that if it remain supported or fixed the body will remain at rest whatever be its position.

(a) See Physics Primer, page 4.

II. The coloured liquid does not quite reach the surface of the water in the vessel because of the weight of the bottom to which the string is attached.

III. Because when evaporation takes place much heat is absorbed and this heat is taken from the body, hence the body feels cold.

(b) It takes about  $80^\circ$  of heat to melt a lb. of ice, consequently in a thaw when the ice is melting, much heat is absorbed; this heat is taken from the atmosphere, hence we feel colder in a thaw than during frost.

(c) See Physics Primer, page 82.

(d) If the fire is placed above the water in the vessel, the surface layer must first be heated and through it the other layers of water; whereas if the fire be placed underneath the vessel the bottom layer is first heated and then ascends to the surface, its place being supplied by the next layer, and so on until the whole is heated.

IV. The specific gravity of a body is its weight when compared with the weight of an equal bulk of water.

(a) Let  $W$  = weight of body in air

$w$  = weight of body in water.

$W-w$  = weight of the displaced water.

$\therefore \frac{W}{W-w}$  = specific gravity of the body.

(b) Let  $W$  equal the weight of a liquid when weighed in a vessel and  $M$  the weight of the vessel.

$\therefore W-M$  is the weight of the liquid.

Let  $W_1$  = the weight of the same vessel when filled with water.

$\therefore W_1-M$  = the weight of the displaced water.

$\therefore \frac{W-M}{W_1-M}$  = the specific gravity of the liquid.

(c) Compare the weights of equal volumes of the gas and air.

V. The quantity of heat which a body absorbs when it passes from the solid to the liquid state or from the liquid to the gaseous. This heat does not affect the Thermometer.

(b) The latent heat of the fusion of ice or the latent heat of water is found from (b) to be  $80^\circ$  as it takes  $80^\circ$  to melt the lb. of ice.

VI. See Physics Primer, page 71.

(a) Water has its maximum density at  $4^\circ$ . The surface of the lake may become frozen whilst the water at the bottom being heaviest remains at  $4^\circ$  of temperature at which fishes and other animals can live.

(b) See Physics Primer, page 72.

"It is readily seen that all bodies have not the same specific heat. If a lb. of mercury at  $100^\circ$  is mixed with a lb. of water at zero, the temperature of the mixture will only be about  $3^\circ$ . That is to say, that while the mercury has cooled through  $97^\circ$ , the temperature of

the water has only been raised  $3^\circ$ . Consequently, the same weight of water requires about 32 times as much heat as mercury does to produce the same elevation of temperature."—*Genoa's Physics*.

VII. It takes  $79^\circ$  of heat to melt a lb. of ice. It takes  $100^\circ$  of heat to raise a lb. of water at zero to a lb. of water at  $100^\circ$ .

To convert a lb. of water at  $100^\circ$  into a lb. of steam at  $100^\circ$  it takes  $537^\circ$  of heat.

Thus to convert a lb. of ice into a lb. of steam the quantity of heat required is  $79^\circ + 100^\circ + 537^\circ = 616^\circ$ .

To convert two lbs. of ice into two lbs. of steam  $1232^\circ$  heat is required.

(a) 1 lb of water at  $80^\circ$  melts a lb of ice

$\therefore$  1 lb of water at  $1^\circ$  melts  $\frac{1}{80}$  lb of ice.

1 lb of water at  $100^\circ$  melts  $\frac{100}{80}$  lbs. of ice.

$\therefore$  the No. of lbs. of boiling water required to melt 50 lbs.

of ice is  $\frac{50}{\frac{100}{80}} = 40$   $\therefore$  No. of gallons = 4.

VIII. See Physics Primer, page 65.  
Let  $F$  denote the No. Fahrenheit degrees  
 $C$  ..... Centigrade  
 $R$  ..... Reaumur

we have  $\frac{F-32}{C} = \frac{180}{100} = \frac{9}{5}$

$\frac{F-32}{R} = \frac{180}{80} = \frac{9}{4}$

$F = 96$

From these equations.

$C = 35\frac{2}{3}$

$R = 23\frac{1}{3}$

IX. See Stewart's Physics, page 95. After a certain number of strokes, the air remaining in the chamber will be so far diminished that its pressure will be insufficient to lift up the lower valve when the piston is raised in the Cylinder. Hence this residual air cannot be exhausted from the receiver.

Madras University.

F. A. EXAMINATION, DECEMBER 1877.

ALGEBRA AND GEOMETRY.

Examiner. — P. RANGANATHA MUDALIYAR, M.A.

I. (a.) Show that  $a^n - (-1)^n b^n$  is divisible by  $a + b$ .  
(b.) Thence deduce that  $49^n + 16a - 1$  is divisible by 64.

II. (a.) Find when  $ax^2 + bx + c$  has not the same sign as  $a$ .

(b.) If  $x^2 + 2ax + 4y^2 - 3a^2 = 0$ , determine the limits between which  $x$  must lie for real values of  $y$  and  $y$  for real values of  $x$ .

but a different question altogether. I knew a man who, when he was asked to draw a map of the south coast of Europe, drew a map of all Europe, and only discovered his mistake when he conversed with the other candidates out-side the hall.

Some examiners are fond of putting in at the end of the main question, a short one founded on it, and to some extent forming part of it; these are commonly known among candidates by the name of "riders." Have a sharp look out for "riders," for candidates are very apt either to overlook them altogether, or to forget them. Take this question as an example:—"Enumerate in detail the various influences which were at work in the fourteenth century to lay the foundation of that supremacy which Chaucer won as the Father of English Poetry. State all that is known of his life, as succinctly as you can." Here the answerer is likely to be so deeply and anxiously engrossed with the first part, that he is in some danger of passing over the last.

After you have finished your answer, read the question once more, before you pass on to the next, to make sure that nothing escapes your notice.

When you are reading over the questions, you must take especial note of any expression about which there might be possibly a misunderstanding; but do not lose time in weighing probabilities.

A paper of questions usually presents much variety as regards difficulty: while some are very simple, others approach or go beyond the limits of the candidate's knowledge.

Your best plan is to make sure of all the easy questions first, no matter in what order they occur on the printed paper; then return to those you have passed, which you should also take in the order of difficulty, so as to leave the hardest or longest of all for the last. That it is best to take the easy questions first, every one knows having any experience of examinations. For a successful run over a number of questions will be sure to put you in a cheerful frame of mind; and like a conqueror flushed with victory, you will go at the difficult ones with increased spirit and momentum. Whereas if you allow yourself to be perplexed or delayed in the beginning, by a puzzling or a long question, you will certainly become dispirited and weary, and probably miss or omit several questions, that with better management, you might have answered with the greatest ease.

Moreover, your standard of difficulty and that of the examiner may be very different in regard to some of the questions. One that appears to you sufficiently simple, from having, perhaps, paid particular attention to some special portion of the subject, may rank high in his estimation; and the very question that you are unable to attempt, may not be regarded by him as of any special importance.

Some candidates show a lamentable want of method in arranging their answers. You will see a man crowding a dozen answers into one page, and by the time he has got near the bottom, he discovers an alarming blunder half way up, or it may be, a dash of ink spoils a good portion of the writing. He is then obliged to re-write the whole page, and loses perhaps half an hour by one error or a slight mishap.

Avoid any approach to over crowding your page. There is no necessity for it; you will get plenty of paper; and should you see

yourself running short, you should call for some before you actually want it. Unless the questions are easy and the answers short, you should put one answer on each page; and remember particularly to write on only one page of a leaf. This will enable you to take the questions in any order you please; and if you have to tear up a wrong answer, you can do so without destroying any of the others. Even when the answers are short, you should not put more than three, or at most four, on a page, leaving plenty of blank space between, as well as at top and side.

However well prepared you may be, you cannot hope to be able to answer everything. When you meet with a question about which you find yourself unable to say anything, pass it by, and give yourself no further trouble about it; consoling yourself with the assurance, that all the other candidates are certain to be at one time or another in a similar predicament.

But if you possess any knowledge at all of the question, however slight, do not let it pass without making some attempt to answer it. Whatever you know about it should find expression on the paper; it can do no harm, and you may get some credit for it. It very often happens that a candidate, when he finds he has only an imperfect knowledge of a question, passes over it altogether, through timidity or nervousness, or not thinking it worth while to give what little he knows about it; and when the examination is over, he is sure to be tormented with unavailing regrets, that he did not make some attempt to answer it.

You will of course, as I have already said, leave all such questions for the last, that if any are crushed out, it may be those entailing the least loss. But you will make some provision for returning on them, either by merely placing the numbers on the margin and leaving blank spaces for the answers, or by arranging, so that you may devote one entire page to each. It occasionally happens, that while answering some other question, a thought will suddenly flash across your mind, which may finally lead to an answer, more or less perfect, to a question passed over.

Be very careful that none of your sheets get mingled with the waste papers on your desk, lest they may go astray and be lost to you. It sometimes happens that a candidate who has given up his papers, discovers, a few minutes afterwards, to his great consternation, a couple of sheets which escaped his notice among the waste paper; or they remain there unnoticed, and no one is ever aware of what becomes of them. When once the time has expired, the examiner may decline to receive such papers, even should you discover them before you leave the hall.

When the time allowed is drawing to a close, arrange all your papers carefully, so that your answers may follow each other in the very same order as the questions. Fasten them all neatly together at the top left hand corner, and lastly, page them very distinctly at the top right hand corner.

One of the necessary preparations for an examination is to make yourself acquainted with the kind of questions usually proposed. You should see as many of the papers as possible, and work through them all; in every case endeavouring to do so within the time allowed by the examiner.

In this matter, however, you must be cautious not to deceive your-

self. For it is to be observed, that the mere inspection, by an outsider, of the papers given at an examination, seldom affords measure of their difficulty. Questions are always easier when you inspect or work them sitting leisurely in your own chair, than when you get them under pressure of examination; just for the same reason that it is much easier for a man to hit a mark when he is practising quietly, than to hit his adversary in a duel.

You cannot too carefully guard yourself against this very general and very treacherous source of deception—judging of the difficulty of questions by inspecting them outside the examination hall. I have heard young men laugh to scorn the blunders committed by some poor candidate, in his hurry and excitement: and I have seen the very same individuals afterwards perpetrate far more astounding blunders themselves. I know of a case where a candidate, preparing for a coming examination, was given by his teacher a paper of questions to work, taken from one of the published reports; and after looking over them, he threw the paper aside, declaring that the questions were so contemptibly easy as not to be worth the trouble of answering. *He got that very paper at his examination three days after, and two of the questions defied his utmost efforts to solve them.*

An ordinary paper on such a subject as Geography, Literature, History, &c., for which two and a half or three hours are commonly allowed, cannot be answered respectably in less than twelve or fourteen pages of foolscap. As a good part of the time will be consumed in reading the questions, collecting the thoughts, and arranging the papers, it will be necessary that a candidate should be able to fill about five or six pages of foolscap per hour. Taking all circumstances into consideration, this is very severe work, and it requires much previous practice at paper exercise, in order that you may be able to accomplish it.

It by no means follows that because a man is a good scholar—fully read up in all the subjects—he will necessarily pass an excellent examination. He may be wanting in tact, he may not possess the power of expressing himself clearly and succinctly, he may be nervous and flurried, with numberless other contingencies, any one of which might seriously deteriorate his answering.

Above all things try to keep yourself cool and collected. The man who is nervous and excited will certainly commit blunders in a dozen different ways:—he will read a question hastily, and wholly misunderstand the meaning, he will leave out half an answer in one place, forget to answer a question altogether in another, omit placing his name at the head of some of his sheets, spoil a whole page with a dash of ink so as to have to tear it up—and so on in endless enumeration.

It is very hard to lay down any intelligible general rules for answering. There are some who in their excessive anxiety to show that they know all about the matter, encumber an answer with a perfect wilderness of explanations; they repeat the same idea in different forms of expression, and perhaps bring in a quantity of matter wholly irrelevant.

This habit is rendered still more unfortunate, if there be conjoined with it—as is not uncommonly the case—an indistinct, roundabout mode of expression; and then it not unfrequently happens that in

the whole of a long answer, there is not to be found a direct reply to the question. There has been plenty of haunching but the nail has never once been struck straight on the head.

You should give yourself the habit of answering in the simplest and fewest possible words; and never, for the purpose of showing your knowledge, introduce extraneous matter. When the question is sufficiently answered, do not be afraid that you have said too little about it; any further words are mere weeds, encumbering the ground and choking the corn. A good answer exhausts all his knowledge of a subject in a short time and in few words; like good gunpowder, that explodes in one flash, and leaves nothing unburnt behind.

Be assured that no inconsiderable part of your success at an examination depends on your following out these directions. Your first case indeed should be to master the various subjects; for no amount of dexterity in answering can compensate for downright want of knowledge. But it often happens that moderate scholarship, aided by quickness, tact, and judgment, goes farther at an examination, than great learning impeded by slovenly answering. The man who despises these necessary precautions, and enters the field trusting solely in the mere bulk of his knowledge, may find, to his cost, that his massive club and all his ponderous efforts to wield it are no match for the light well-aimed missiles of some nimble adversary with half his strength.—Adapted from Dr. J. W. Joyce.

### EXAMINERS' REPORTS ON THE MADRAS

F. A. EXAMINATION, 1878.

"There is no doubt" says Captain Hallett in his Report on the English, "that diffuseness is a besetting sin among University candidates—a sin that requires checking. The lads write on and on without thinking what they write."

"There are two other very prevalent faults which seem to require notice, viz., carelessness and slovenliness. These are closely akin to diffuseness, being with it bred of impatience."

"First, as to carelessness. The candidate is in so great a hurry to answer that he does not wait to see what he has to answer. He cannot spare time to read and appreciate the question. The consequence is he answers a part of it only, or does not answer it at all, but supplies instead, two or three pages of more or less valuable information which the examiner has not asked for." \* \* \* Let me give an example of this carelessness. At the late F. A. Examination I wished to see if candidates possessed the very necessary power of describing in simple and concise language something with which they were familiar. I chose an easy subject—any outdoor game they happened to know. I also asked that this game might be criticised as a test of skill and as a means of exercise. At least one-third of the candidates made no attempt whatever to describe a game, but favoured me instead with physiological common places on the benefit of exercise generally. They were asked for a homely letter they produced a quasi scientific essay. Some few selected cards and chess. In both cases it was evident that the question was not read carefully.

"Turning now to slovenliness. It will be found that a very large proportion of answer books abound in smudges and erasures—smudges because the writers do not stop to blot the sheets, erasures

because they write the first word or expression that crosses the mind without pausing to consider its suitability and, as a necessary consequence, have to alter and re-alter. In fact these answer books are practically rough drafts and are quite unfit for submission to an examiner."

"Seeing that graduates in this country are almost without exception lads having their way to make in the world, the question naturally arises whether any amount of book-learning will compensate for the total want of order, cleanliness, and neatness, here exhibited. It seems to me that a minimum of these desirable qualities should be insisted on."

With reference to the History, Mr. Bindon writes: "there is a marked difference in stations—Bangalore, Trivandram, Bellary, and Tanjore being very bad, especially the last \* \* \* Rajamandri is far the best station."

### HOW TO MEET EXAMINATIONS.

THE student should, the few weeks preceding the day of examination subject himself to rigorous self-tests; he should systematically work out past examination papers, carefully noting all points in which he fails, and afterwards endeavouring to overcome any difficulties he may have met with. The memory should be refreshed in all matters of dates, facts, and figures, and the essential principles of every subject should be kept diligently before the eye. During the day or two immediately preceding the commencement of the examination, the mind should enjoy comparative rest, the body should be indulged with healthy exercise, and work should be limited, if possible, to running through the various note-books, and to refreshing the memory in the matter of dates, &c., as mentioned above. And now a word or two as to the management of the paper on the day of the examination. The candidate should endeavour to remain as cool and calm as possible; coolness and calm confidence are perhaps as valuable qualities here as they are on the field of battle, or in posts of imminent danger. Nervousness and flurry discompose the mind, disorder the train of thought, and diminish to no small extent the chances of success. Once let the mind get confused, and answers are imperfectly given, questions are altogether misunderstood, and others, which the candidate is quite capable of answering well and ably, are hurriedly passed over. The candidate should commence work by a careful and deliberate perusal of the paper set, and, unless he feels confident that he can answer the whole, he should begin with those questions which can be at once and correctly answered, and which will occupy but a short time. Having disposed of these, he may proceed to questions of greater difficulty or of less certainty. All the paper, it is perhaps needless to say, should be legibly and neatly written, and the answer to each question should be carefully numbered. In the case of *vide roce* examinations coolness and self-confidence are the more to be insisted on. The candidate is asked but few questions, and if through nervousness he fail to answer these he is condemned as ignorant, and his chance of success is lost. There are many other minor points in the way of preparation for examinations which deserve some notice, but it is impossible for us to linger longer over the subject. What we have set forth will, we trust, be of service to many students, inducing in them method, order, and system in study.

saving for them much time and labour which might otherwise have been spent to no purpose, and at the same time producing in them coolness, deliberation, and calm self-confidence when the day of trial arrives.—*Bombay Educational Record*.

## SOLUTIONS IN ALGEBRA, GEOMETRY AND PHYSICS.

### MATRICULATION CLASS.

#### PHYSICS.

(Provincial School, Mangalore.)

Examiner:—C. W. BURROUGHS, B.A. LL.B.

- I. Explain what is meant by the centre of gravity and shew how to find experimentally the centre of gravity of a heavy triangle.
- II. Describe the experiment which proves the upward pressure of water and explain how it is that the coloured liquid does not quite reach the surface of the water in the vessel.
- III. Assign Physical reasons for the following facts:—
  - (a) Evaporation from the surface of the body is accompanied by the sensation of cold.
  - (b) We feel colder in a thaw than during frost.
  - (c) A mixture of snow and salt produces intense cold.
  - (d) When we want to boil the water in a vessel we put the fire underneath instead of above it.
- IV. Explain what is meant by the specific gravity of a body, and shew how to find
  - (a) The specific gravity of a body heavier than water.
  - (b) The specific gravity of a liquid.
  - (c) The specific gravity of a gas.
- V. What is meant by latent heat?
  - (a) If a pound of water at  $80^{\circ}$  is mixed with a pound of water at zero, the temperature of the mixture is  $40^{\circ}$ .
  - (b) If a pound of pounded ice is mixed with a pound of water at  $80^{\circ}$ , the ice melts and two pounds of water at zero are obtained.

From the preceding data calculate the latent heat of water.
- VI. According to what law do gases expand on the application of heat.
  - (a) At what degree of temperature has water its maximum density. Explain the importance of this fact in the economy of nature.
  - (b) Define specific heat and shew by a simple experiment that all bodies have not the same specific heat.
- VII. How much heat is required to convert two pounds of ice into two pounds of steam?
  - (a) How many gallons of boiling water will be required to melt 50 lbs. of ice?
- VIII. A gallon of water weighs ten pounds.
- VIII. How are the fixed points on the thermometer determined? Convert  $96^{\circ}$  F. into the other scales.
- IX. Write a description of the air pump, and shew that it is impossible to exhaust all the air in the receiver.

III. (a.) Solve  $x + y = 3$ ,  $y + z = 5$ ,  $x^3 + y^3 + z^3 = 36$ .

(b.) If the roots of  $\sqrt[n]{ax + b} = \sqrt[n]{bx + a} = \sqrt[n]{a + b}$  be equal, show that  $\frac{a}{b}$  must be one of the three cube roots of  $-1$ .

IV. Find the formula for the number of combinations of  $n$  things taken  $r$  at a time, without assuming the formula for permutations.

V. Find the number of ways in which fourteen coins not distinguishable from one another, may be divided among three persons so that no one may have less than three coins.

VI. (a.) Prove the Binomial Theorem for a negative integral index, assuming its truth for a positive integral index.

(b.) Find the coefficient of  $x^{n-2}$  in the expansion of

$$\frac{x^2 - 3x + 4}{(1-x)^3}$$

VII. If  $p_n q_n \sqrt{-1}$  represent respectively the real and imaginary parts in the expansion of  $(1 + \sqrt{-3})^n$ , show that  $p_{n-1} q_n = q_{n-1} p_n = 4^{n-1} \sqrt{3}$ .

VIII. (a.) Triangles on the same base and between the same parallels are equal to one another.

(b.) D is a fixed point in the same base BC of a triangle ABC. Through G, any point in a fixed straight line parallel to BC, GH is drawn parallel to AD cutting BC in H. Show that the difference of the triangles ABG, ABH is constant.

IX. (a.) If two straight lines cut one another within a circle, the rectangle contained by the segments of the one is equal to the rectangle contained by the segments of the other.

(b.) ABC, DBE are diameters of a circle at right angles to one another. AFG is any chord cutting DE in F and the circumference in G. Show that the rectangle contained by AF, AG is equal to the square on AD.

X. (a.) Equiangular triangles have the sides about their equal angles proportionals.

(b.) ABC is an isosceles triangle. D is a point in AC such that BD equals the base BC. Show that BC touches the circle circumscribing ABD.

(c.) If BE be a diameter of this circle, and AF, BG perpendicular to BC, AC respectively, show that BE is a third proportional to AF, AB; and that ED is to AB as AG to AF.

XI. (a.) Equal triangles which have one angle of the one equal to one angle of the other have the sides about their equal angles reciprocally proportional.

(b.) Construct a triangle, having given the base, the vertical angle, and the rectangle contained by the sides.

### Solutions.

### ALGEBRA.

1. (a.)  $a^n - (-1)^n b^n = a^n - (-b)^n$  which is divisible by  $a - (-b)$  or  $a + b$  whatever  $n$  may be.

$$\begin{aligned} (b.) \quad 49^n + 16n - 1 &= (7^{2n} - 1) + 16n \\ &= (7 + 1) \{ 7^{2n-1} - 7^{2n-2} + 7^{2n-3} \dots + 7^3 - 7^2 + 7 - 1 \} + 8 \times 2n \\ &= 8 \{ 7^{2n-1} - 7^{2n-2} + 7^{2n-3} \dots + 7^3 - 7^2 + 7 - 1 + 2n \} \\ &= 8 \{ (7^{2n-1} + 1) - (7^{2n-2} - 1) + (7^{2n-3} - 1) \dots + (7^3 + 1) - (7^2 - 1) \\ &\quad + (7 + 1) + (-1 + 1) \} \end{aligned}$$

$\therefore 7^{2n} - 1$  when divided by  $7 + 1$  leaves  $2n$  terms in the quotient and  $2n$  is equal to  $1 + 1 + \dots$  to  $2n$  terms.

Now  $7^{2n-1} + 1$  is a multiple of  $7 + 1$  or  $8$ ,  $2n - 1$  being odd

$7^{2n-2} - 1$  ..... of  $7 + 1$  or  $8$ ,  $2n - 2$  being even

$7^3 + 1$  .....  $7 + 1$  or  $8$

$7^2 - 1$  .....  $7 + 1$  or  $8$

$7 + 1$  .....  $8$

$-1 + 1 = 0$

$\therefore$  The whole is divisible by  $8 \times 8$  or  $64$ .

II. (b.)

(1.) Since  $x$  is real in the equation  $x^2 + 2ax + 4y^2 - 3a^2 = 0$ , we have the quantity under the root, (viz.,)

$4a^2 - 4(4y^2 - 3a^2)$  positive

or  $16(a^2 - y^2)$  ..... positive

or  $-16(y^2 - a^2)$  ..... positive

or  $-16(y - a)(y + a)$  positive

or  $16(y - a)(y + a)$  ..... negative

which is the case only when  $y$  lies in value between  $a$  and  $-a$ .

(2.) The above equation may be written in the form of

$$4y^2 \pm 0y + a^2 + 2ax - 3a^2 = 0.$$

Since  $y$  is real we have the quantity under the root, (viz.,)

$0 - 4(a^2 + 2ax - 3a^2)$  ..... positive

or  $4(a^2 + 2ax - 3a^2)$  ..... negative

or  $4(a - a)(a + 3a)$  ..... negative

which is the case only where  $x$  lies in value between  $a$  and  $-3a$ .

III. (a.)  $x + y = 3$ ;  $y + z = 5$  and  $x^3 + y^3 + z^3 = 46$ .

now  $x^3 + y^3 + z^3 = (x + y)^3 - 3xy(x + y) + z^3 = 36$

or  $3^3 - 3xy \cdot 3 + z^3 = 36$  [for  $x + y = 3$ ]

or  $27 - 9y(3 - y) + (5 - y)^3 = 36$  [for  $x = 3 - y$ ]  
[and  $z = 5 - y$ ]

or  $27 - 27y + 9y^2 + 125 - 75y + 15y^2 - y^3 = 36$

or  $y^3 - 24y^2 + 102y - 116 = 0$

or  $(y - 2)(y^2 - 22y + 58) = 0$

$\therefore$  either  $y - 2 = 0 \therefore y = 2$

or  $y^2 - 22y + 58 = 0 \therefore y = \frac{22 \pm \sqrt{22^2 - 58 \times 4}}{2}$

$= 11 \pm 3\sqrt{7}$

So  $z = 1$  or it can take two other values and  $z = 3$  or it can take two other values.

(b.) The equation  $\sqrt{ax+b} - \sqrt{bx+a} = \sqrt{a+b}$  is the same as

$$ax + b + bx + a - 2\sqrt{(ax+b)(bx+a)} = a + b$$

$$\text{or } x(a+b) = 2\sqrt{(ax+b)(bx+a)}$$

$$\text{or } x^2(a+b)^2 = 4(ax+b)(bx+a)$$

$$= 4\{abx^2 + x(a^2 + b^2) + ab\}$$

$$\text{or } x^2(a+b)^2 - 4x(a^2 + b^2) - 4ab = 0.$$

Since the roots are equal we have

$$16(a^2 + b^2)^2 + 16ab(a-b)^2 = 0$$

$$\text{or } 16(a^4 + b^4 + 2a^2b^2 + a^3b + ab^3 - 2a^2b^2) = 0$$

$$\text{or } 16(a^4 + b^4 + a^3b + ab^3) = 0$$

$$\text{or } 16(a^3 + b^3)(a+b) = 0$$

Here either  $(a^3 + b^3)$  or  $(a+b) = 0$ .

taking  $a^3 + b^3 = 0$  we have

$$a^3 = -b^3 \text{ or } \frac{a^3}{b^3} = -1 \text{ or } \frac{a}{b} = \sqrt[3]{-1}$$

$\therefore \frac{a}{b}$  must be one of the three cube roots of  $-1$ .

V. Since, by the question, none of the three should have less than three coins, let us first give them three coins each. Then there remain 5 coins more, and the question is simplified thus: In how many ways, can five coins, not distinguishable from one another, be given to 3 persons.

$$\text{Now } 5 = (a) 5 + 0 + 0 = 3 + 1 + 1 = 2 + 2 + 1$$

$$\text{or } (b) 4 + 1 + 0 = 3 + 2 + 0.$$

All the five may be given to the 1st and nothing to the other two or All ..... 2nd and...

or All ..... 3rd.

Thus 5, 0, 0 can be given to them in 3 ways (1)

So 3, 1, 1 ..... 3 ways (2)

And 2, 2, 1 ..... 3 ways (3).

Again when 4 are given to the 1st, the 2nd may receive one and the 3rd nothing or the 2nd may receive nothing and the 3rd one. Thus when 4 are given to the 1st, 1 and 0 can be given to the others in two ways; So when 4 are given to the 2nd the others may receive 1 and 0 in two ways and so for the 3rd.

Thus 4, 1, 0 can be given to them in 6 ways (4)

So 3, 2, 0 ..... 6 ways (5)

$\therefore$  on the whole the coins may be distributed among them in  $3 + 3 + 3 + 6 + 6$  or in 21 ways

VI. (b) Find the co-efficient of  $x^{n-2}$  in the expansion

$$\text{of } \frac{x^2 - 3x + 4}{(1-x)^3}$$

$$\text{Now } \frac{x^2 - 3x + 4}{(1-x)^3} = (x^2 - 3x + 4)(1-x)^{-3}$$

$$= (x^2 - 3x + 4) \left\{ 1 + 3x + \frac{3 \cdot 4}{2} x^2 + \frac{3 \cdot 4 \cdot 5}{6} x^3 \text{ \&c. ad. in. } \right\}$$

The co-efficient of  $x^{n-2}$  in the expansion of  $\frac{x^2 - 3x + 4}{(1-x)^3}$  may be

obtained by multiplying the co-efficient of  $x^2$  in the 1st factor by that of  $x^{n-4}$  in the 2nd factor, by multiplying the co-efficient of  $x$  in the 1st by that of  $x^{n-3}$  in the 2nd, and by multiplying the co-efficient of  $x^0$  in the 1st by that of  $x^{n-2}$  in the 2nd and then adding the products.

The co-efficient of  $x^{n-4}$  in the 2nd factor =  $\frac{3 \cdot 4 \cdot 5 \dots (n-2)}{n-4}$

$$= \frac{n-2}{2} \cdot \frac{n-3}{2} = \frac{(n-3)(n-2)}{2}$$

$$\text{The co-efficient of } x^{n-3} \dots \dots \dots = \frac{(n-2)(n-1)}{2}$$

$$\text{and the co-efficient of } x^{n-2} \dots \dots \dots = \frac{(n-1)n}{2}$$

$\therefore$  The co-efficient of  $x^{n-2}$  in the expansion

$$= 1 \times \frac{(n-3)(n-2)}{2} - 3 \times \frac{(n-2)(n-1)}{2} + 4 \times \frac{(n-1)n}{2}$$

$$= \frac{n^2 - 5n + 6 - 3n^2 + 9n - 6 + 4n^2 - 4n}{2} = \frac{2n^2}{2} = n^2.$$

VII. By the question we know that  $p_n$  and  $q_n \sqrt{-1}$  represent the real and imaginary parts in the expansion of  $(1 + \sqrt{-3})^n$ .

Let  $x$  stand for  $\sqrt{-3}$  and  $y$  for  $\sqrt{-1}$

then  $(1+x)^n = p_n + q_n y$  and  $(1-x)^n = p_n - q_n y$

also  $(1+x)^{n-1} = p_{n-1} + q_{n-1} y$  and  $(1-x)^{n-1} = p_{n-1} - q_{n-1} y$

$$\therefore (1+x)^n (1-x)^{n-1} = p_n p_{n-1} + p_n q_{n-1} y - q_n p_{n-1} y - q_n q_{n-1} y^2$$

$$\text{(i.e.) } (1-x^2)^{n-1} (1+x) = p_n p_{n-1} - q_n q_{n-1} y^2 + (p_n q_{n-1} - q_n p_{n-1}) y \dots \dots \dots (A)$$

$$\text{and } (1-x)^n (1+x)^{n-1} = p_n p_{n-1} - p_n q_{n-1} y + q_n p_{n-1} y - q_n q_{n-1} y^2$$

$$\text{(i.e.) } (1-x^2)^{n-1} (1-x) = p_n p_{n-1} - q_n q_{n-1} y^2 - (p_n q_{n-1} - q_n p_{n-1}) y \dots \dots \dots (B)$$

Subtracting (B) from (A) we get

$$2(1-x^2)^{n-1} x = 2(p_n q_{n-1} - q_n p_{n-1}) y$$

$$\{1 - (\sqrt{-3})^2\}^{n-1} \sqrt{-3} = (p_n q_{n-1} - q_n p_{n-1}) \sqrt{-1}$$

Dividing both the sides by  $\sqrt{-1}$  we get

$$\{1 - (\sqrt{-3})^2\}^{n-1} \sqrt{3} = p_n q_{n-1} - q_n p_{n-1}$$

$$\text{or } 4^{n-1} \sqrt{3} = p_n q_{n-1} - q_n p_{n-1}$$

## GEOMETRY.

## VIII (b.)

Join GD.  $\therefore AD$  is parallel to  $GH \therefore \triangle ADH = \triangle ADG$ . (I-37).  
Add to each of these  $\triangle ABD \therefore \triangle ABH =$  the figure  $ABDG$   
 $\therefore \triangle ABH - \triangle ABG =$  the figure  $ABDG - \triangle ABG = \triangle BGD$   
and  $\triangle BGD$  is constant, because, if  $G$  occupies any other position as  
 $G'$ ; the resulting difference between the two triangles in question  
becomes  $\triangle BGD'$  which is nothing but  $\triangle BGD$ , since  $\triangle BGD$  and  $\triangle$   
 $BGD'$  are equal, standing on the same base  $BD$  and between the  
same parallels  $BD$  and  $(GG')$ . (I-37).

IX. (b.) The rectangle  $AF \cdot AG = AE \cdot FG + AF^2$ . (II-3). But  
 $AFFG = DF \cdot FE$ . \* (II-35).  $AF^2 = AB^2 + BF^2$ . (I-47).  
 $\therefore AF \cdot AG = DF \cdot FE + BF^2 + AB^2$ . But  $DF \cdot FE + BF^2 = EH^2$   
or  $BD^2$ . (II-35).  $\therefore AF \cdot AG = BD^2 + AB^2 = AD^2$ . (I-47).

X. (b.) Now  $AB = AC \therefore \angle ABC = \angle ACB$ . (I-5). But the  
 $\angle ACB = \angle BDC$ . (I-5).  $\therefore \angle ABC = \angle BDC$ .  
 $\therefore$  the  $\angle$ s  $ABC$  and  $ACB$  of  $\triangle ABC =$  the  $\angle$ s  $BCD$  and  $BDC$  of  $\triangle BDC$ .  
 $\therefore$  the remaining  $\angle BAC =$  the remaining angle  $DBC$ . (I-32, axs 1&2).  
 $\therefore \triangle ABC$  is equiangular to the  $\triangle BCD$  and the sides about the equal  
angles of these triangles are proportionals. (VI-4).  $\therefore AC:BC$  as  
 $BC:CD$ .  $\therefore AC:CD = BC^2 \therefore BC$  touches the circle  $ABD$ . (III-37).

(c)  $BE$  is the diameter and  $BC$  the tangent of the circle  
 $\therefore \angle EBC$  is a right angle (III-18) and  $\angle AFC$  is a right angle.  $\therefore EB$  is  
parallel to  $AF \therefore \angle FAB = \angle EBA$  (I-29) and the right angle  $AFB$   
 $= \angle EAB$  which is a right angle being in the semicircle  $EADB$ .  
(III-31).  $\therefore$  the remaining  $\angle ABF =$  remaining  $BEA \therefore \triangle ABF$   
is equiangular to  $\triangle EAB \therefore AF:AB$  as  $AB:BE$ . (VI-4).  $\therefore BE$   
is a third proportional to  $AF$  and  $AB$ . Again the angle  $EUB$  being  
in the semicircle is a right angle and equal to the right angle  $AGB$   
and  $\angle$ s  $BED$  and  $BAD$  on the same segment are equal. (III-21).  
 $\therefore$  the remaining angle  $EBD = \angle ABG$ .  $\therefore \triangle EBD$  is equiangular  
to  $\triangle ABG \therefore ED:EB$  as  $AG:AB$  or  $ED:AG$  as  $EB:AB$ . But  
 $EB:AB$  as  $AB:AF$  we have proved  $\therefore ED:AG$  as  $AB:AF$  or  $ED:AB$   
as  $AG:AF$ .

XI. (b) Let  $AB$  be the given base.

On  $AB$  describe a segment of a circle containing an angle  $=$  the  
given angle. (III-35). Complete the circle.

Take a straight line  $KL$  equal to the diameter of the circle  $ACD$ .

On  $KL$  describe a rectangle  $KLMN =$  the given rectangle of the  
sides. (I-44). \*

From  $A$  draw  $AH$  at right angles to  $AB$  and equal to  $KN$ . Through  
 $H$  draw  $HDC$  parallel to  $AB$  cutting the circle at  $D$  and  $C$ . (I-31).

Then  $\triangle ACB$  or  $ADB$  will be the required one. \* Draw  $CE$  per-  
pendicular to  $AB$ .

Because the  $\angle ACB$  in the segment  $=$  the given angle.  $AB$  is the  
base and the rectangle  $AC \cdot CB =$  the diameter  $\times$  perpendicular  $CE$   
or  $AH$  (VI. c)  $= KL \cdot KN$  which is by construction  $=$  the given  
rectangle of the sides.

## NOTES ON THE SECRET WAY.

(Concluded from page 295).

107.\* They should be *flow* if the pronoun is in apposition to "*tribes*"  
which is governed by *among*. If we consider it in appos. to "*fathers*"  
the case is correct.

They... *Cyrus*. The reference here is to the last battle and the death  
of Cyrus the Great. In B.C. 529 he led his army against the Massagetae  
the hand of whose queen, Tomyris, he had in vain sued for, and was  
slain in battle.

108. *Wains know no sieges*. So the Knebworth Edition. Messrs.  
Addison & Co's reprint has *plains* instead of *vains*.

109. *The rallied vengeance of his Medes*. The epithet is trans-  
ferred—the meaning being "the vengeance of his rallied Medes." "The  
Medes had returned from their flight."

*One night*. Adv. *nocturna*.

110. *Paris, Agamemnon*. Paris, one of the sons of Priam, king of  
Troy, ran away with the beautiful Helen, wife of Menelaus of Sparta.  
For this the Greeks went against Troy. Agamemnon, king of  
Mycenae, was chosen generalissimo of the European forces. There  
were others, however, among the Greeks who were more distinguish-  
ed, e.g., Achilles in bravery and strength, and Ulysses in strategy  
and council. Hector was the bravest on the Trojan side. For ten  
years the siege went on, when Troy or Ilium was at last taken by a  
stratagem devised by Ulysses. B.C. 1184 is commonly given as the  
date, but such an impenetrable mist hangs over the whole story,  
that most persons reject it altogether. Homer's *Iliad* is on this sub-  
ject. The second book of Vergil's *Aeneid* also gives us the story.

112. *Titan*. For the allusion, see Smith's *Classical Dictionary*  
under *Titanes*.

113. *Leaving*. Participial to "words." Argiope's words left re-  
signation behind them in the hearts of the hearers.

116. *The Happy Fields*. Elysium, in which the souls of the good  
were supposed to dwell after death.

119. *This petty tribute*. Demanding "earth and water" was with  
the Persians demanding a confession of dependence. The tribute  
was really therefore far from a "petty" tribute.

120. *Or gold or life*. This is a Latinism commonly occurring in  
English verse. The first "*or*" stands for *either*.

122. *Prophetic mind*. A phrase imitated from Shakspeare.

"O my prophetic soul."

*Hamlet*.

124. *Grateful*. And in proof of gratitude the earth "stretches out  
chainless arms." See next Stanza.

125. *Inviolable*. Adj. qualifying country. Thou hast saved to the  
Scyth his country inviolable.

\* N.B.—The numbers refer to the stanzas and not to the lines.



127. *Riving*. Rending asunder.

128. *Æthiops*. Ethiopians, Abyssinians.

*Held* = confined; participle qualifying *Æthiops*.

*And the work done*. *Work* is nominative absolute.

*Scut*. Participle to *Æthiops*.

129. *Purple*. Here plainly something made of purple cloth, as in Stanza 133—"the purple pall," where *pall* means 'covering,' (from Lat. *pallium*, a cloak,) usually applied now to the cover thrown over a coffin. In Stanza 179 *dash* is used for the purple canopy that is referred to here. See also Stanza 183.

130. *Issue*. Not here, as with us commonly, that which issues or comes out (Lat. *exire*, through the Fr.) but something out of which one may come and go, a gate; a door. So also in Stanza 149.

*Widths of plain* = wide plains. Hendiadys. Cf. Cowper's Task. ii. 2. "Some boundless contiguity of shade."

131. *Space itself engulphs him*. He will be lost in the boundless plains. "Engulphs" for "will engulf."

132. *Epochs, Actions*. Nom. to "are" understood.

134. *I am no eagle*, &c. Omaros says that he had been actuated in all that he did by the one principle of "centring scattered valours," that is, of collecting all the energies of his wandering band into one city and state; and that if this, the purpose of his whole life, were now to be defeated, he would not survive the failure. He refused to look upon himself as other than a king. Whenever his life as king was to be ended, by the ruin of his kingdom, then, he says, his life as man should end too. He was not a puny eagle that might fly away to other haunts, for he had up to this time wielded the power and enjoyed the privileges of a civilized king.

"The *Ægis* worn by Zeus [or Jupiter] was the hide of the goat Amaltheia, which had suckled him in infancy. Homer always represents it as part of the armour of Zeus, whom on this account he distinguishes by the epithet *ægis bearing*. He, however, asserts that it was borrowed on different occasions, both by Apollo and Athena. The *ægis* was connected with the shield of Zeus, either serving as a covering over it, or as a belt by which it was suspended from the right shoulder. Homer accordingly uses the word to denote not only the goat-skin, which it properly signified, but also the shield to which it belonged. The *ægis* was adorned in a style corresponding to the might and majesty of the father of the gods. In the middle of it was fixed the appalling Gorgon's head, and its border was surrounded with golden tassels, each of which was worth a hecatomb."

The eagle was the bird of Jupiter, and is perhaps suggested in the text by the thought of the *ægis*.

\*135. *As life*. I. e. merely because it is life. To the young and strong, life is full of pleasure. *Win sunbeams*. Grow towards the light. Cf. Stanza 42.

138. *This funeral hour*. This hour which sees the death of all our hopes and prayers.

*The sole lawful guardian*. A husband.

*Failing thee*. Thou being no longer with her. *Failing* seems here used in the sense of *excepting*, and governs the pronoun in the objective. In prose we should say *Thou failing*, "when thou would be nom. abs. Lytton may perhaps here intend to use the old dative

case *thee* as a case absolute just as Milton uses *him*; e. g., "And *him* destroyed: all else will follow."

139. *To lengthen yet the line*, &c. To give birth to a future king of Scythia.

140. *The clue of the labyrinth*. Minos, King of Crete, had a labyrinth constructed by Daedalus, in which he kept a monster, the Minotaur (lit., Minos's bull,) half man and half bull. The Athenians were forced to send Minos an annual tribute of seven youths and seven maidens to be devoured by the monster. Theseus, son of the *Ageus* mentioned already, volunteered to go with thirteen other unfortunates to Crete. Luckily for himself and his country, Ariadne, princess of the country, fell in love with him, and gave him a clue of thread to find his way out of the labyrinth. The hero succeeded in slaying the Minotaur, and finding his way back.

141. *Stint*. The famine.

143. This will remind the Hindu reader of the *Seayanzara* 200

144. *Are* in the second line may form with the adjs. *keen* and *apt* the pred. of *that*. But if we put in a comma after it, it will become a complete pred. in itself; and the prose order of the Stanza will be: "But since, for [ = as a ] guide and leader of the few that are [ = remain ] for such service, *Seuthes* is most keen and apt, &c."

145. *Straight*. At once. The Biblical *straightway*.

147. *Hers will be my refuge*. Her refuge will be my refuge.

148. *Board*. Metonymy for table.

149. *The clue...the maze*. See on St. 140.

*To either issue*. To each end.

150. *Treasure, town and king*. Three noms. abs.

*Treason* is nom. to *flushed*, in line 3 of the next Stanza.

154. *Dust and drops*. See on St. 119.

156. *Safe*. Archaic for *sure*.

157. *But for* = if it were not for.

*Lyaph*. Water.

*Chaspea*. "A river of Susiana, falling into the Tigris. Its water was so pure that the Persian kings used to carry it with them in silver vessels, when on foreign expeditions."

158. *Achaemenian kings*. Persian kings, so called from Achaemenes, "the ancestor of the Persian kings, who founded the family of the *Achaemenidae*, which was the noblest family of the *Pasargadae*, the noblest of the Persian tribes." [See Lytton's note.]

159. *Implied the forms*. Had not the courage to utter them plainly, but merely hinted at them, or insinuated them.

161. *Thy deed degrades thee from the foe-man*. Thy baseness no longer makes thee worthy of being looked upon as a foe-man. Cf. Scott:—

"That stern joy which warriors feel  
In foemen worthy of their steel."

163. *Stalls*. Present tense, showing *future time*. This is only because the event is represented as being absolutely certain if the antecedents (the promise failing, &c.) come about. *Fall*, *ensnare*, and *blunder* are in the subjunctive.

164. *A traitor*, &c. A traitor dead is entombed in the maws of the vultures and the dogs.

165. *Sacred Band*. Bodyguard, or select corps. The select guard of Thebes was known by this name: it was composed of 300 young men of the best families. War and, a little after it, *treason* are used for *warriors* and *traitors*; abstract for concrete, metonymy. *Rampire* is the poetic form of *rampart*.

Marched war "War" = "the army." Cf.

"The cloud enveloped Scotland's war  
As o'er the hill they broke."

Marmion.

"Fated," Intended.

169. In the 3rd line we have alliteration. [Distinguish between *funereal* and *funeral*.]

170. *At either end departing*. Parting in different directions at each end. *Either* is often used carelessly for *each* or *both*; it properly denotes 'one of two' not 'both of two.'

174. *Anger*. Prophet, foreteller of events, so named from such persons being originally proclaimers of the will of the gods as intimated by the flight, chattering, &c., of birds.

176. *Those who grieve, &c.* Women, children, and helpless men. These often palsy the efforts of the brave warriors filled with anxiety for them.

179. *Dais*. (French *dois* or *daïs*, Lat. *dorsum*, traceable to the Lat. *discus*, a quoit, round dish, &c.) Used of the table at the upper end of a banqueting hall, (ii) the raised platform at that end. (iii) the chair of state placed there, and (iv) the hanging drapery over it.

183. *Under purple pall*. See on Stanzas 129 and 179.

185. *Blushed the rose*. She blushed red as a rose.

*One who walks in slumber* = a somnambulist.

187. *Dorian... gods*. Hellen, the reputed founder of the Hellenes or Greeks, had, it was said, three sons named Æolus, Dorus, and Xuthus. From Dorus sprung the Dorians, the finest tribes of whom were known as the Lacedæmonians or Spartans, who in hardihood, bravery, warfare, were greatly superior to other Greeks in classical times. Xuthus had two sons, Iola and Achæus, the first named was the ancestor of the Ionians, who in the arts of civilization were first of the kindred tribes. The Athenians were an offshoot of the Ionians.

191. *Spun*. Nom. to "*flame*."

*Scorried*. See on St. 102.

*One glare*. Note this force of *one*. The meaning is there was "nothing but *glare*." Cf. Milton:—

"A dungeon horrible on all sides round  
As one great furnace flamed."

*The single lord, &c.* Zariades.

194. *Man's most sinful sin*. Cf. Shakespeare, *Lear*, I, iv, —

Ingratitude, thou marble hearted fiend,  
More hideous when thou show'st thee in a child,  
Than the sea-monster

How sharper than a serpent's tooth it is  
To have a thankless child.

We may conclude these notes on *The Secret Way* with the following sketch of the life of the writer and a criticism on his Poetry:—

Lord Lytton Bulwer Lytton son of General Bulwer of Norfolk, born 1805. Carefully educated by his mother. Publishes an Oriental tale at the age of fifteen. Gains the prize at Cambridge for a poem on Scripture, 1825. Publishes his famous novel of Pelham, 1828, which is quickly succeeded by others. Enters Parliament, 1831. Made Secretary of State for the Colonies, 1853. Died at Torquay in 1872 and was buried in Westminster Abbey. His only surviving child is Lord Lytton, the present Viceroy and Governor-General of India.

The chief prose works of Bulwer Lytton are *Pelham*, *The Disowned*, *Deveraux*, *Paul Clifford*, *Eugene Aram*, *The Last Days of Pompeii*, *Rienzi*, *Zanoni*, *The Last of the Barons*, *Harold*, *The Caxtons*, *My Novel*, *A Strange Story*, *Kennelm Chillingly*, *The Coming Race*. In Poetry his chief works are *King Arthur*, *The Ballads of Schiller*, *The New Timon*, and *The Lost Tales of Miletus* published in 1866.

"Bulwer Lytton," says an American writer, "was a novelist, poet, and one of the most persistent. During middle age he renewed the efforts made in his youth to obtain for his metrical writings a recognition always accorded to his ingenious and varied prose-romances; but whatever he did in verse was the result of deliberate intellect and culture. The fire was not in him, his measures do not give out heat and light, and his shorter lyrics never have the true ring; his translations are somewhat rough and pedantic; his satires were often in poor taste, and brought him no great profit; his serio-comic legendary poem *King Arthur* is a monument of industry, but never was labour more hopelessly thrown away. In dramas, like *Richelieu* and *Chenoweth*, he was more successful; they contain passages which are wise, elegant, and effective, though rarely giving out the subtle aroma which comes from the essential poetic principle. Yet Bulwer had an honest love for the beautiful and sublime, and his failure to express it was almost pathetic."

## CORRESPONDENCE.

### EVANGELINE.

TO THE EDITOR OF THE MADRAS JOURNAL OF EDUCATION.

SIR,—In Part II., line 302, of Longfellow's *Evangeline*, there is the following reference to Philadelphia:—

"And the streets still re-echo the names of the trees of the forest."

It may perhaps interest some of your readers to know that Philadelphia, the city founded by "Penn the Apostle" is built very regularly at the confluence of the rivers Delaware and Schuylkill and the streets that run parallel to these rivers are named First Street, Second Street, &c., while the streets that cross them at right angles are named Chestnut Street, Walnut Street, &c., from the fact that formerly groves of these trees existed on the spots where they are built. This explains the allusion in the poem.

Yours truly,

VIATOR.

## EXAMINATION PAPERS.

MATRICULATION CLASS, 1878.

## EVANGELINE.

I. Give a short account of the life of Evangeline prior to the expulsion of the Acadians. Make brief quotations to prove (a) Evangeline's piety; (b) her filial devotion; (c) her industry and (d) the love in which she was held.

II. (a) "these simple Acadian farmers  
Dwelt in the love of God and of man."

(b) There the richest was poor, and the poorest lived in abundance.

(c) "Wild with the winds of September  
Wrestled the trees of the forest."

(d) Angel of God was there none to awaken the slumbering maiden.

Explain the above quotations and point out anything that appears ambiguous or paradoxical in any of them.

III. To what metre is this poem written? name some other English poems written in this metre. Scan the line:—

"Far far was the air with the odorous breath of magnolia blossoms."

What is meant by *arabesque* and what by *quantity*?

Is the rhythm of Tamil and Telugu poetry regulated by the latter or by the former?

IV. Give the meaning of the following passages and parse fully the words italicized:—

(a) "The flowerets dropp'd from her fingers

And from her eyes the light and bloom of the morning.

(b) Into her thoughts of him time entered not for it *was* not.

(c) "When *without* in the gathering darkness Bursting with light seemed the *smilley* through every cranny and crevice.

(d) And her ear was pleased with the *Thee* and *Thou* of the Quakers.

V. (a) Give in your own words a brief description of the natural scenery on the banks of the river Mississippi; or (b) relate the episode of the Statue of Justice. [The answer to (a) will carry twice as many marks as the full marks allotted to (b).]

VI. Analyse (page 23, line 374)

"Little she dreamed, &c., to for a moment."

VII. In what connection do the following passages occur? explain briefly the allusions in them:—

(a) The streets still re-echo the names of the trees of the forest.

(b) "The poor ye always have with you."

(c) "A sound of dread such as startles the sleeping cucumbers  
Far in the western prairies."

(d) As out of Abraham's tent young Ishmael wandered with Hagar.

(e) Like the plane tree the Persian adorned with mantles and jewels.

VIII. Write brief notes on the following proper names:—

Blomidon; Opelousas; Adayes; Saginaw; Caspereau; Wachita; Wabash; Beau Sejour.

IX. Write in prose order and in the form of indirect narration p. 19, lines 254-264.

"Then with a pleasant smile, &c., the joy of our children."

*Free Church Institution.*

## DORA.

I. Change the following passage into indirect speech, using suitable introductory verbs:—

Alan. — I'll make them man and wife.

William. — I cannot marry Dora; by my life,  
I will not marry Dora.

Alan. — You will not, boy? you dare to answer thus!

But in my time a father's word was law,

And so it shall be now for me. Look to it;

Consider, William: take a month to think,

And let me have an answer to my wish;

Or, by the Lord that made me, you shall pack,

And never more darken my doors again.

Expand the phrase *in my time* and the word *or* into a clause; and give the force of *in* in *darken*, of *shall* and of *by*.

II. Analyze into clauses:—

(a) The more he looked at her the less he liked her.

(b) But Dora stored what little she could save,  
And sent it them by stealth; nor did they know  
Who sent it; till at last a fever seized  
On William; and in harvest time he died.

(c) I have obey'd my uncle until now,  
And I have sinn'd, for it was all thro' me  
This evil came on William at the first.

III. Expand into clauses the words or phrases in italics:—

(a) And Dora promised, *being* much.

(b) She tied it round his hat.

*To make* him pleasing in her uncle's eye.

(c) And I will beg of him *to take thee back*.

(d) He could not ever rue *his marrying me*.

(e) He was wrong *to cross* his father thus.

(f) I have been *to blame*.

IV. Express in your own words:—

(a) I must be taught my duty and by you!

(b) Do with me as you will, but take the child  
And bless him for the sake of him that's gone.

(c) And all the man was broken with remorse.

(d) Now therefore look to Dora; she is well

To look to; thrifty too beyond her years.

V. (1) What feeling is expressed by the acts of 'biting the lips,' and of 'bowing down her head upon her hands,' respectively?

(2) What change would be made in the following if it were written in prose:—

"He woo'd and wed a labourer's daughter."

(3) Rewrite the following so that no point of exclamation may be required:—"May he never know the troubles I have gone through!"

VI. Parse and give the construction of the words in italics :—

- (a) But, *Mary*, for the sake of him *that's gone*,  
And for your sake, the *woman* that he chose,  
And for this orphan, I *am come* to you.  
(b) For none of all his men  
*Dora* tell him *Dora* waited with the child.  
(c) Of all the flowers that grew *about*.  
(d) *Thou* and I *will go*.

I. In the following passage, change the *direct* portions into *indirect*, altering, where necessary, the introductory words :—

He came and said : " Where were you yesterday ?  
Whose child is that ? What are you doing here ?"  
So Dora cast her eyes upon the ground,  
And answered softly, " This is William's child."  
" And did I not," said Allan, " did I not  
Forbid you Dora ?" Dora said again :  
" Do with me as you will, but take the child,  
And bless him for the sake of him that's gone."  
And Allan said, " I see it is a trick  
Got up betwixt you and the woman there,  
I must be taught my duty and by you !"

II. Rewrite the following, substituting for the word *as* wherever it occurs, some other word or phrase, without altering the sense :—

As I was going along the road *as fast as possible*, *as* I expected it to rain and wished to make all haste so *as* to reach home before getting wet, suddenly the rain began to descend in torrents *as* if it wished to drown me. I hastened on, but *as* I increased my speed the storm increased in violence, and just *as* I entered my house it stopped, *as* I wished it had done much sooner.

III. Answer either of the following, but not both :—

(a). Describe the feature of character that is exemplified by the hero of " Excelsior," and point out the circumstances under which it would be right to exemplify such a character.

(b). Express, in your own words, (1) the chief lesson taught by *The Village Blacksmith*, and (2) the lesson taught regarding *debt*.

IV. (a). " My own enthusiasm was chiefly awakened by the wonderful and the terrible." Express without using the article.

(b). " At Bath I went through the discipline of the pump room, but I believe *without the least advantage to my leanness*." Supply the ellipsis so as to show what the italicised phrase modifies.

(c). " Few sermons can be read with as much profit as the memoirs of Burns, of Chatterton or of Savage." Express as an affirmative sentence.

(d). Write a sentence containing the verb *to lose* governing two objects, a direct and an indirect one.

(e). " The traveller, by the faithful hound,  
Half buried in the snow was found."

Point out what change in the sense would be caused by removing the second comma from after *hound* to after *snow*.

V. Rewrite, expressing the italicised portions in plainer English :—

When a boy comes up to college from the Mofussil, the scenes of his home life are *warm in his recollection*, and for a time he seems to have left his heart in his native village. If however the spirit of

emulation runs high in the class, his enthusiasm is soon awakened, and his head is on fire for collegiate distinctions. He is anything but pleased if he finds his class-fellows *longo intervallo a-head of him*; but if his understanding is of good calibre, and if he makes a point of working hard, he very soon makes up his *lee-way*, so that he is likely not to have a narrow escape in the University Examinations, but to make a bright figure in them.

VI. William and Dora were related to each—as——. William's father was very—to——them in marriage, and——William to offer—to Dora as——husband. William—to comply——his father's——and when the——bade him take a month to——the——, and——to banish him if he continued——, William—the house, became a——labourer, married a——girl, by——he became the——of one boy, and a——years died leaving his——in——circumstances. At last——Allan——of his——conduct to his son, and took his three——to live——him during the——of his life.

Supply one word in each of the blank spaces, so as to make proper sense.

VII. Who, or what, were the following ?

The knight of La Mancha——Moses' bargain of the green spectacles——uncle Toby——the Presbyterian Ulysses——The Forty-five——the monks of St. Bernard.

VIII. Paraphrase :—

Old Tubal Cain was a man of might  
In the days when earth was young;  
By the fierce red light of his furnace bright  
The strokes of his hammer rung.  
And he lifted high his brawny hand  
On the iron glowing clear,  
Till the sparks rushed out in his scarlet showers,  
As he fashioned the sword and spear,  
To Tubal Cain came many a one,  
As he wrought by his roaring fire,  
And each one prayed for a strong steel blade  
As the crown of his desire :  
And he made them weapons sharp and strong,  
Till they shouted loud for glee,  
And gave him gifts of pearls and gold,  
And spoils of the forest free.

Wesleyan Anglo-Vernacular Institution, Royapettah.

MATRICULATION CLASS.

I. Paraphrase the first twelve lines of the Psalm of Life.

II. Fill in the clauses that are suppressed in the following extracts :—

(1). Let me have an answer to my wish :  
Or by the Lord that made me, you shall pack.

(2). She thought  
" It cannot be : my uncle's mind will change."

(3). Well—for I will take the boy  
But go you hence and never see me more.

(4). You know there has not been for these five years so full a harvest.

III. Rewrite (1) in the indirect form :-

"My uncle took the boy ;  
But, Mary, let me live and work with you :  
He says that he will never see me more."

(2). Without irony

"I must be taught my duty and by you."

(3). Without "if," and changing "too" into "more than."

"If there was an old mother or aunt to be maintained he was too apt to administer to their necessities from what the young heir had destined exclusively to his pleasures."

IV. Point out anything faulty in

(1). So saying, he took the boy that cried aloud

And struggled hard."

(2). But Don't lived unmarried till her death.

(3). Leaped like the roe when he hears in the woodland the voice of the huntsman.

(4). His manners were rather formal but full of genuine kindness, especially when exercising the duties of hospitality.

(5). John Scott, my second brother is about 3 years older than me.

(6). I begged him to spare this fatigue.

(7). With this little acidity which was natural to him, he was a most excellent and benevolent man.

V. Give the meaning and where you can the derivation of *secton*, *paratize*, *evolsier*, *fanchion*, *clarion*, *grabadocs*, *etiquette*, *jeuial*, *rival*, *banotic*.

VI. Explain briefly. *Druids of old*, *the reign of the Horries*, *Pious monks of St. Bernard*, *downer widows*, *Jacobites*, *Anon from the belfry*, *the Angelus sounded*, *penitent Peter*, *knight of La Mancha*, *the Augustan age of Queen Anne*.

VII. (1) What two meanings has *dwelt in the love of God and of men*?

(2). Is the word *confidant* correctly used in *Alison took care that her confidant should not be subject to any further temptation*.

(3). What is the difference between (1) *had seen Pope*, and *had seen the Pope*; (2) *He married late* and *He married lately*.

VIII. What is the meaning of the name Grand Pré? Quote the passage in which the meaning is stated. What particulars are given in Evangeline as to the geographical position of Grand Pré?

IX. Make sentences of your own using correctly--*no sooner than*, *than one*, *too good*, *more or less*, *provided that*.

X. Give examples from your text of (1) the gerundial infinitive used adverbially, (2) the gerundial infinitive used adjectively, (3) the verbal noun in *ing*, (4) the true infinitive in *ing*, (5) Euphemism, (6) Synecdoche, (7) Tautology.

XI. State in few words what you consider to be the moral lesson of Excelsior.

London Mission High School, Salem.

ENGLISH PROSE.

I. Explain the following :-

(1) He was bred to the sea.

(2) He was a steady friend to freedom, with a bias, however, to the monarchical part of our constitution.

(3) His appearance sufficiently vouched the truth of his prophecy.

(4) I had sense enough to bend my temper to my new circumstances.

(5) I glanced like a meteor from one end of the class to the other.

(6) Non sine diis animosus infans.

II. Supply the omissions in the following :-

(1) With the same — to —, or rather I should say, the same — that — us all, he had neither the — of — which — the — of —, nor the — which — the most — better than — or —

(2) I, with a head on fire for —, was a —; my friend was a —; I was a —, and he was a —; I hated — and admired — with his victorious —; he liked the —, the dark and politic —; so that we never wanted subjects of —; but our — were always —.

III. Give the construction of the words, phrases, and clauses italicised in the following :-

(1) Robert sung agreeably (*a virtue which was never seen in me*) — understood the *mechanical arts, &c.*

(2) My father and mother had a very numerous family *no fewer, I believe, than twelve children.*

(3) The resemblance was nevertheless detected by George Chalmers, Esq. Solicitor, *London*, an old friend both of my father and Mr. Constable, and who affirmed to my late friend, Lord Kinnedder, that I must *needs* be the author of the Antiquary.

(4) *To return to George Constable*, I knew him well at a much later period.

(5) It is here at Sandy Knowe, in the residence of my paternal grandfather, *that I have the first consciousness of existence.*

(6) I spouted the speech of Galgacus at the public examination, *which did not make the less impression on the audience that few of them probably understood one word of it.*

(7) *If my studies were not under any direction at Edinburgh*, in the country, it may be well imagined they were less so.

IV. (1) Give the force of the words italicised in the following :-

(a) Uncle Toby *himself* could not have conducted *himself* with more simplicity than my father.

(b) Who did him the honour to run *in* his debt to the amount of thousands.

(c). *With this little acidity*, he was a most excellent and benevolent man.

(2) Give the different meanings of *fair*, *fare*, *but*.

(3) Distinguish between *to take air*, and *to take the air*, *Respectful*, *Respectable* and *Respective*.

(4) Give a noun derived from *remain*; the verb from which *parlour* comes; and nouns of locality from *obscure* and *infirm*.

(5) At London we *made a short stay*. Give a single word for the italicised.

(6) It is probably owing to this circumstance that I did not

make any great figure at the High School. Rewrite as a simple sentence.

- (7) His birth being admitted as gentle gave him access to the best society in the country. Rewrite as a complex sentence.

V. Give the meaning of—

*Professional researches, a turn for literature, regular physicians, odd incident, odd volume, odd fish, Anguian age, an indulged brat, flow of imagination, a melancholy bellman, Eternal Rudiments, Oseianic phraseology, topical remedy, Imputed righteousness.*

VI. 1. Explain the allusions in

*Moses' bargain of the green spectacles, Jacob's ladder, Saratoga disaster.*

2. Derive and Explain

*Attorney, Calvinism, Jacobite, Cupid, Tweedry, Iconoclast, Allegory, Auger, Volatundivory, Dorachery.*

3. What is a Pun? Give an example of one from your Text-Book and one from elsewhere.

4. Define Climax. Give an example from your Text-Book.

VII. Point out anything wrong in the following:—

1. John Scott is about three years older than me.
2. His face was of a length that would have rivalled the Knight of La Mancha's.
3. I was in my fourth year when my father was advised that the Bath waters might be of some advantage to my lameness.
4. In a word I, who in a city had probably been condemned to helpless decrepitude, was now a healthy and high-spirited child.
5. My grandmother continued for some years to take charge of the farm.
6. I was easily persuaded to spend half a year with my kind aunt whose inmate I again became.

VIII. Construct sentences to show the correct use of,

*More or less, at the expense of, among others, to be on one's guard, keep (Int: Verb) to make good, at worst, in the person of, by the bye, then, me.*

IX. Mention examples from your Text-Book to illustrate

1. The force of love.
2. The simplicity of childhood.
3. The readiness of vanity to lighten the labors of duty.

X. Give an account of Scott's residence in Bath.

XI. Describe the character of Nicol.

XII. Write a paraphrase of the following passage:—

"And had been from infancy devoted to legendary lore of this nature, and only reluctantly withdrew my attention from the scarcity of materials and the rudeness of those which I possessed, it may be imagined, but cannot be described, with what delight I saw pieces of the same kind which had amused my childhood, and still continued in secret the Delights of my imagination, considered as the subject of sober research grave commentary, and apt illustration, by an Editor who showed his poetical genius was capable of emulating the best qualities of what his pious labour preserved."

XIII. Analyse the passage in Question XII into clauses giving the construction of those that are Subordinate.

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F. A. CLASS.

PARADISE LOST—BOOK II.

I. Explain the following passages with special reference to the words italicized:—

- (a) "Surer to prosper than *prosperity*  
Could have assured."
- (b) "Or if our substance be indeed divine  
And cannot cease to be, we are at worst  
*On this side nothing.*"
- (c) "..... Since our lot appears  
*For happy though but ill, for ill not worst,*  
If we procure not to ourselves more woe."
- (d) "..... And what peace can we return  
*But to our power hostility and hate.*"
- (e) "..... while the labouring moon  
Eclipses at their charms."
- (f) "..... for that mortal dirt  
Save he who reigns above, none can resist."
- (g) "..... Into this wild abyss,  
*The womb of Nature* and perhaps its *grave.*"
- (h) "And fast, by hanging in a *golden chain*  
*This pendent world,* in bigness as a star  
Of smallest magnitude close by the moon."

II. (a) In what peculiar senses are the following words used by Milton,—

forgetful, impotence, fatal, conjure, mortal, and pretence?

(b) Give the derivation of heroic, alchemy, feign, puny, landscape and horrent.

III. Scan the following lines, and criticize the versification:—

- (a) Exile, or ignominy, or bonds, or pain.
- (b) Within heaven's bound, unless Heaven's Lord Supreme.
- (c) Thy lingering or with one stroke of this dart.
- (d) For hot, cold, moist, and dry, four champions fierce.

IV. Explain the allusions contained in the following, and complete the similes:—

- (a) "As when Alcides from Oechalia crown'd  
With conquest, felt th' envenomed robe and tore  
Through pain up by the roots Thessalian pines,  
And Iachus from the top of Oeta threw  
Into th' Euboic sea."
- (b) "..... and like a comet burned  
That fires the length of Ophiuchus huge  
In the Arctic sky, and from his horrid hair  
Shakes pestilence and war."

V. Shew with illustrative quotations how the language and sentiments of Moloch and Belial are peculiarly suited to their character as drawn in the First Book.

V4. Milton's allegory of Sin and Death is generally considered to be most happily conceived. Give reasons.

VII. Is there any allusion to contemporary events, or any indication of Milton's unbending Puritanism in the Second Book?

VIII. Give a list of Milton's poetical works. What part did Milton take in the political events of his age?

IX. Paraphrase—

(a) Thus repulsed, our final hope  
Is flat despair: We must exasperate  
The Almighty Victor to spend all his rage,  
And that must end us; that must be our cure,  
To be no more. Sad cure! for who would lose,  
Though full of pain, this intellectual being,  
Those thoughts that wander through eternity,  
To perish rather, swallow'd up and lost  
In the wide womb of uncreated night,  
Devoid of sense and motion?

(b) Thus they their doubtful consultations dark  
Ended, rejoicing in their matchless Chief:  
As when from mountain-tops the dusky clouds  
Ascending, while the north-wind sleeps, o'er-spread  
Heaven's cheerful face, the lowering element  
Scowls o'er the darken'd landscape snow or shower;  
If chance the radiant sun with farewell sweet  
Extend his evening beam, the fields revive,  
The birds their notes renew, and bleating herds  
Attest their joy, that hill and valley rings.

#### SHAKESPEAR'S TEMPEST, ACT I.

I. Explain the following passages:—

(a.) His complexion is perfect gallows. Stand fast, good Fate,  
to his hanging: make the rope of his destiny our cable, for our own  
doth little advantage.

(b.) Like one  
Who having unto truth, by telling of it,  
Made such a sinner of his memory,  
To credit his own lie, he did believe  
He was indeed the duke.

(c.) When thou didst not, savage,  
Know thine own meaning, but wouldst gabble like  
A thing most brutish, I endowed thy purposes  
With words that made them known.

II. Give the meanings and derivations of the following: wadkin, signories, extirpate, boat, zenith, urchins, chanticleer.

III. Mention, with illustrations, four points in which Shakspear's grammar differs from the modern usage.

IV. Explain the following phrases: we split, to trash for over-topping, as fast as mill-wheels strike, twelve winters, the vast of night; an odd angle, to change eyes, my fool my tutor.

V. Quote and explain three sea-terms used by Shakspear, in this Act.

VI. Briefly comment upon the history, character and powers of Ariel.

VII. Explain the following passages:—

(a.) never any  
With so full soul, but some defect in her  
Did quarrel with the noblest grace she owed,  
And put it to the foil.

(b.) As you like this, give me the lie another time.

(c.) Lingerin' perdition—worse than any death  
Can be at once—shall step by step attend  
You and your ways; whose wraths to guard you from  
Which here, in this most desolate isle, else falls  
Upon your heads,—is nothing but heart-sorrow  
And a clear life ensuing.

VIII. (a.) Quote the description of the goitre. What is noteworthy in this allusion?

(b.) Write out as exactly as you can Miranda's answer to Ferdinand's question "Wherefore weep you?"

IX. As an exercise in composition, write a concise description of the characters of Caliban and Stephano.

X. Write notes on the following words: visitation, sanctimonious, plummet, ecstasy, bachelor, pole-clipt, wanton, minion, lakin, thrid.

Explain the following expressions: I am in case to juggle a constable, he lays it on, each putter out of five for one, it did bass my trespass, praise in departing, the strongest oaths are straw to the fire in the blood, brained like us.

XI. Discuss the merits of the various readings of the following passages:—

(a.) But these sweet thoughts do even refresh my labours  
Most busiest when I do it.

(b.) Thy banks with pioned and twilled brims.

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#### SCOTT'S CHIVALRY--SHAKESPEAR'S TEMPEST, ACT I.

I. (a.) Give a "general and abstract definition of Chivalry." What is the phrase complementary to this one?

(b.) How does Scott fix the date when the "seeds of chivalry" first came to maturity? Give the approximate date definitely.

II. (a.) What is meant by the Knights of the Round Table? When is King Arthur supposed to have flourished? Show that it is an anachronism to invest King Arthur's contemporaries with the badges of chivalry.

(b.) What is meant by the Knights of the Bath? What reference is made to this order in the text? What other orders of Knighthood are there under the British Crown?

III. By whom, at what time, in what language and for what purpose was Don Quixote written?

IV. (a.) Criticise the position of *only* and bring out the force of *at least* by means of a clause.—"To support its honours, which (in theory at least) could only be conferred on the gallant," &c.

(b.) Explain what is meant by:—"The strain of sentiment, which chivalry inspired, remained after the decay of its positive institutions."—"The subjection of sensuality to sentiment."

(c.) Remark on the use of *the* in:—"became regard and affection."

tion in the husband towards the sharer of his labours and the mistress of his household."

(d). What are the correlatives of *the* in—*the more, the rather, &c.*? Give sentences as examples.

V. (a). What is meant by religious Toleration? Show what place it had in the history of the times of which you have been reading; and illustrate by reference to the history of the Albigenes and the Spanish conquest of South America.

(c). Define superstition and show how the religion of the Knights was deluged by superstition.

(e). How can it be said that the Crusades were begun and carried on "in the true spirit of chivalry"?

VI. (a). What exactly was the story of Thordisa intended to illustrate? (b) Relate the story of Palamon and Arcite. (c) Simply state what rank in chivalry the following lines describe:—

Wei could he sit on horse, and faire ride.

He could songes make.....

Joust and eek dance.....

Courteous he was, lowly, and serviceable,

And carve before his father at the table.

VII. (a). Give the etymology and meaning of:—enlist, esquire, joust, page, tournament.

(b). Explain—to break a spear with one—to fight against extravagant odds—to trash for over-topping—the point of honour.

(c). Give the force of *ex cre*; and remark on the form of *betid* and the meaning of *learn* in this part of the Tempest.

(d). Give the supposed original forms of the names Sycorax and Caliban.

VIII. Quote and explain the successive orders given to the mariners, during the tempest, to prevent the ship, if possible, from being wrecked.

IX. Write notes on (a), (b) and (c) with regard to questions of grammar only. Also show in (c) what Ferdinand's prison was:—

(a). Art ignorant of what thou art nought knowing

Of whence I am, nor that I am more better

Than Prospero, master of a full poor cell,

And thy no greater father;

(b). and, but he's something stain'd

With grief that's beauty's canker, thou might'st call him

A goodly person.

(c). My father's loss, the weakness which I feel,

The wreck of all my friends, nor this man's threats,

To whom I am subdued, are but light to me,

Might I but through my prison once a day

Behold this maid.

Scan (a) dividing into feet and marking the accents.

X. In Prospero's account of himself to Miranda.

(1) To what cause on his own part does he assign his downfall and banishment?

(2) How does he show that Miranda was no trouble to him then.

(3) By what new line of conduct on his part does he expect that his fortunes will rise again.

XI. Explain the allusions:—(a) His 'polar star' to steer by. (b) Water with berries in 't.

Dorseton College.

F.A. CLASS, 1878.

# GRANT'S XENOPHON. CHAPS. I.—IV.

I. Derive and explain *alien*, *amnesty*, *capitulation*, *collusion*, *loot*, *naïve*, *plastic*, *precarious*, *scout*, *surcead*, *sycophant*, *tact*.

II. Give clearly and fully the meaning of

(a) He exchanged the sword for the pen. (b) He seems to "sit loose" on his country. (c) Clearchus had "played them" like fishes.

(d) Cyrus had the adroitness to "make capital" out of the circumstance. (e) It is true that all this time he was on his promotion, and therefore on his best behaviour. (f) Presently this danger appears to have occurred to the Persians, and with it the expediency of "making a golden bridge for a flying enemy."

(g) Tissaphernes came upon them in force. (h) After a libation of gratitude to the gods, the dispositions for crossing were made. (i) We see the total want of "solidarity" among the Greek states. (j) They were within an ace of sacking Byzantium. (k) The satrap gave him the cold shoulder. (l) He became anxious to plant a thorn in the side of the Persian magnate.

(m) But now a fresh shuffle of the political cards in Greece took place. (n) The picture presented to us by Xenophon of his life at Scyria is quite idyllic, and thoroughly Greek.

III. Form short sentences to illustrate the proper uses of *aperia*, *debris*, *elan*, *hors de combat*, *rise*, *souvenir*, *guerilla*, *mine-ola*, *ovine*, *data*.

IV. Write down and explain—

(a) four words formed from the names of places.

(b) four words formed from the names of persons.

(c) four examples of proper nouns generalized into common or class nouns.

V. Express in the indirect—

Xenophon rejoined, "Come, come: in such severe weather as you mention, when provisions had failed, and we had not wine so much as to smell to,—when many were exhausted with fatigue, and the enemy were close behind,—if at such a time I behaved insolently, I acknowledge that I must be more vicious than an ass, which, they say, is too vicious to feel being tired. Tell us, however, why you were beaten. Did I ask you for anything, and beat you, when you would not give it me? Did I ask anything back from you? Was I quarrelling about a love affair? Did I maltreat you in my cups?"

VI. Write grammatical notes on—

(a) He could not have had much hereditary riches to depend on. (b) We cannot build any theory on Xenophon's having stated that he was present on the occasion. (c) The Greeks burst out laughing. (d) He was going to come over to him. (e) It was 30 feet broad. (f) On the Prince asking what it was, Xenophon told him. (g) This prevented the army taking many prisoners. (h) They fought their way. (i) He was roughly treated by a friend of Xenophon's. (j) A good many of the soldiers disbanded. (k) This is a treatise on choosing, keeping, and sitting the horse. (l) They thus turned back whatever was not desirable to be brought. (m) The news was brought to him.

VII. Analyse

(a) In an instant they doffed their purple cloaks, and all arrayed as they were in splendid vests and embroidered trousers.



and with their gold chains and bracelets on, they plunged into the mire and executed his orders.

(b) "But this," he added, "would be stealing a march, and in any question about stealing I am diffident in speaking before Jacobinicians, who, it is well known, are trained in this art from their boyhood."

VIII. Explain the allusions in

(a) the Jacobites of the Forty-five, (b) our own betrayed army at Cabul, (c) Ancient Pelasgic towns with Cyclopean Masonry, (d) One prisoner denied that there was any, and he was then put to death *pour encourager les autres*, (e) Sinope—a name rendered familiar to the present generation by the disastrous episode of the Russian War, (f) The symbolic precursor of Greek nautical enterprise, (g) He saw in them a means of ridding himself of the army which he had made his caspary, and wanted no longer, (h) And the Olympic games were something more than equal to the Derby, (i) After the manner of Eucliden.

IX. Who were Artapates, Clearchus, Parysatis Sikons, and Tisaphernes?

X. Write short notes on Darius—Hoplites—Mina—Palæstra—Pelopon—Stater—Talent—Tara.

### ORTHOGRAPHY IN REFECTION TO ETYMOLOGY. AND LITERATURE.

(Concluded from p. 378.)

But to return from this little excursus, real etymological studies are some of the severest known. Etymology is no child's play. It is not to be taught by cramming in a silent letter here and there. It is a noble study, an excellent worthy exercise of the human mind, dealing with signs which man has created to express his thoughts and assist him in thinking. The etymology of English in particular must be acquired by tracing through early documents the various forms which a word has received, that is, the various sounds which by a process of phonetic change have subsided into the sound now used, and by seeing the relation of these earliest forms of sound with those in the cognate Germanic and Scandinavian languages first, and then in the Norman-French and classical, and afterwards in the general Indo-European group. Once discovered, the etymology may be registered in dictionaries, and may even be made popular in school manuals. And from these sources those who would like to know, without the ability to investigate, may find what they seek so far as it has been discovered, whatever changes in orthography may be subsequently made. But observe that it is only so far as the sound can be reduced to writing, only so far as the despised pronouncing dictionaries of the past, or their equivalents, the laborious investigations of qualified phoneticians, re-vivify, and clothe in real speech the dead symbols of the pen, that this history can be traced; and if we insist upon using such spellings as *feign*, *foreign*, &c., it will be only through the correctness of our pronouncing dictionaries of to-day that our great-grand children will have a notion of what nineteenth century English was like. And observe also that the least troublesome and least important part of the etymological history of

our language is the discovery of the modern Greek and Latin words with which pedants, scholars, philosophers, and men of science have crammed it. Yet it is to such derivations that those who know a little Latin and less Greek naturally turn when they think of etymology, and even in those they entirely miss the linguistic point. We have seen how such a man as Archbishop Trench stumbled over *debt* and *doubt*, misled by his own pet orthography, to attribute them to a Latin instead of to a French source. True the French had taken them from the Latin, or rather Latin has passed into these terms through French mouths. But where did the Latins get them? Within the Latin language itself there is very much to learn respecting the form of the words *debitum*, *dubitare* (of which, and not of *dubium*, the *t* at least ought to speak "eloquently") and their origin. The first is really *dē-litēō* "I dispossess," the second is related in a not very clear manner to words expressing *duality*, the "eloquent" *b* itself occasioning considerable difficulty. If we spell *debt*, *doubt*, why stop here? Why not go to *dehilt* *dubit*? Where are we to stop if we jump over the immediate French ancestor, as too modern? There can be no doubt that such stories about words as Archbishop Trench was once fond of retelling, are entertaining gossip, but they are no more, when the subject is viewed in its general relations. But surely, surely, we don't want every time we write the word to parade this knowledge, or to force it on our friends, and we do not think it fit work for the youngest children at school to be bothered with before they can well speak their own language, and have scarcely heard of any other! The main etymological fact bearing upon such words, is that at no period of our language have words been adopted direct from the Greek without first giving them a Latin dress. Even the maddest tradesman or philosophical word-crafter of to-day spells his Greek words in Latin letters. All Greek words, therefore, come to us Latinised, and all Latin words, except those ecclesiastical terms, such as *bishop*, which came in direct with Christianity, have next to pass through a Norman-French, or in later times a simply French, preparation before we can make them English, which again requires an important alteration to adapt them to English mouths. Thus we say *nation* is Latin *natio*, but the *n* shows it to be distinctly French, and the sound also shows it to be distinctly French, although orthography makes both French and English words the same. It will not do at all to say that *village* and *villain* are both from the Latin *villa*. The terminations have to be accounted for. We require not only phonetic knowledge, but historical knowledge, to arrive at form and signification.

Now why is etymology insisted on? Miss Stevenson, writing in 1763 to Dr. Benjamin Franklin, a very practical man indeed, and withal a printer, who yet had the crotchets of improving English spelling by new alphabetical arrangements, observed, as ninety-nine in a hundred educated ladies and gentlemen, who have not studied the subject, think, directly they hear of such a thing: "All our etymologies would be lost, consequently we could not ascertain the meaning of many words." To which the clear-headed old philosopher replied: "Etymologies are at present very uncertain, but such as they are, the old books would still preserve them,

and etymologists would there find them. Words in the course of time change their meanings, as well as their spelling and pronunciation, and we do not look to etymology for their present meanings. If we should call a man a *Knave* and a *Villain*, he would hardly be satisfied with my telling him, that one of the words originally signified only a *lad or servant*; and the other an *elder ploughman, or the inhabitant of a village*. It is from the present usage only the meaning of words is to be determined." Here he calmly and succinctly destroys two blunders. The first is, that such knowledge as our present orthography may give of the origin of our words to those who have gone through the necessary training, will be "lost," if we merely change our spelling without destroying every vestige of its existence. No one would be dolt enough to do this, even if he possessed the power, for surely no one wages a religious war in England against orthography, whatever may be the case in Servia, where Roman and Russian letters have come to be ecclesiastical symbols. If we spelled *det* and *dout* henceforth some kind dictionary-maker would be sure to tell us all that is known about the words. The second spectre Franklin laid was that, etymology unknown, meaning would be lost! Why, all the old Greeks and Romans were profoundly ignorant of etymology, and the greatest linguists to this day dispute about the origin of their words. Yet they certainly knew the meaning of what they were saying, and the modern scholar is never tired of singing the praises of their languages.

It may be taken for granted that there is no harm in a master pointing out, when the pupil is old enough to comprehend him, how words have come from Latin and Greek, what is the meaning of a root, how the root was modified by added syllables in these languages, and how the composite form was again modified in Latin and French, provided the teacher is up to the modern high-water mark, and does not overdo the business. Then he may trace the root under different forms, as in "surface, surfeit, fact, perfect, prefect, superficial, facial," and so on, and shew how the original signification became modified and the recent meaning arose. But to suppose that all this could be shown by spelling, or that, if the origin were known, the present meaning would be known, is mere hallucination. Let us try to use some words occasionally in their etymological sense, and we should convert warmed-up meat into *biscuit* (*his coctus* twice cooked), find that the railway translates us (*trans* beyond, *latus* carried), that muddy water is not *sublimis* (*super limum* above the mud), that a baby carried behind its mother is *metaphorical* (*meta* after, *phora* I carry), and when she turns round to see it she is *antitropical* (*anti* opposite to, *stropho* I turn); we should call a handiworker a *surgeon* (*cheir* the hand, *ergon* work), an overseer of the poor a *bishop* (*episcopus* overlooker), a servant a *deacon* (*diakonos*) or *minister* (*minister* a servant), an auctioneer who looks after lots or else a member of parliament who is elected by ballot a *clerk* (*klerikos* belonging to a lot), the sole of our shoe our *understanding* or our *substance* (*sub* under, *stare* to stand), and such like follies, fit merely to raise a laugh. We may trace a river from its source to its mouth, and then give a history of the journey. But from neither end can we predict the other. We have just had a most memorable instance of this in Stanley's tracing of the Congo, or Livingstone river, the third largest in the world, of which the

mouth was long known, and the commencement had been found by Livingstone, and seen by Cameron, without either having the least idea that the beginning and end belonged to each other. An exact knowledge of the levels of a country might enable us to do both. But in finding those levels we should infallibly trace the rivers. So in Etymology, we may more or less satisfactorily trace the history of the changes which a word or root has undergone in meaning and in form, if not from its origin at least from an early period to the present day. But from the modern meaning we can never tell the ancient source whence it was derived, nor from the old source the new meaning. And for the speaker—is it possible that those who preach up this value of etymology can suppose that we check ourselves in the full flow of speech, or our audience loses the thread of our discourse, to consider whether this word is Saxon or Scandinavian or Norman, whether it came from the Latin or Greek or Hebrew or Indian, whether it is now used and pronounced as our ancestors used it five or six centuries ago, or whether both sound and meaning have not materially changed. No, we speak as we feel, we use the word as we hear it, it is part of ourself, of our life, of our thoughts. To us, language is not a thing of shreds and patches, gathered here and there. It has assimilated the pulchrum which it has collected from all sources and made it *our language*, and as our own we use it, as our own we cherish it, as our own we defend it against all comers. We speak to be understood, we employ words in the sense they have grown into by living use, and pour them forth direct from heart to heart.

But if we attribute any value to etymology as a mental discipline, we should study the sounds of words and endeavour to express systematically what those sounds are. The Engytype transliteration of the specimens, and the translations of the two first, as given in the appendix, shews what can be done in each stage of our language. King Alfred wrote in Old English; Ormin, King Henry III., and Caxton in various forms of middle English; my transliteration of Caxton is in early modern English; and the translations, with their Engytype, are in the very latest modern English. Now remember that I am not proposing to you at all to write in Engytype. In fact, this is the first occasion that I have printed anything in this orthography, but I think it quite evident that, if a whole series of documents were printed in some such mode of spelling, (as for example my palatotype, which I have employed in my Early English Pronunciation,) we should at once have a clue to the gradual alteration of our language, to its history, to its real form at any epoch, and hence to its relations with other languages.

"But what a havoc this would make of our literature!" exclaims almost every eye that is accustomed to the ordinary spelling of the period. "It would be a complete change in our language!" cries another. Of course such a change of spelling would change the outward aspect of our written and printed literature wherever it was employed. But it would not in the slightest degree change the inward life of our literature; nay, rather, it would tend to resuscitate the past and prevent the future from being buried under the debris of a disintegrated orthography. In some select series of ancient authors we should be able to appreciate the rhyme and rhythm of England's poets, the music of its prose writers, the conceit

and puns of our comic authors, the express image of their time presented at once to the eye and mind, instead of having to be painfully dug up, like Schliemann's jewels at Mycenæ, from a bed of mud and rubble. I entirely deny that such changes in the outward appearance of our past literature, which I have necessarily presented only in specimen and as an experiment, would play havoc with our literature. To those accustomed to wigs, the natural hair was hirsute, untidy, and uncivilised. When the Bishop of London doffed his wig, during my own boyhood, there were many who thought that the Church could not stand the innovation. Our judges and barristers still wear their grotesque cauldflower on the top of black hair, with black whiskers, moustachios, and beard often strongly displayed, without feeling the incongruity. There is no truer image of our present orthography and our habitation to its absurdity.

But the other cry, that a change of spelling would be a change of language, a cry which I have heard over and over again, is simply and entirely absurd, when the same series of sounds conveying the same meaning is attached to both systems of orthography. For this series of significant sounds is the language; the letters or words conveying them are merely its habiliments. When, as in French and English or German, the series of sounds and their senses are as different as the sign, there is a change of language, and people seem to have confused the two cases, and because at present, when they learn a new language, they learn a new orthography, imagine that when they learn a new orthography they learn a new language. It is rather the opposite which is true. We might form a system of writing which would serve for several distinct languages, and more or less accurately distinguish their whole series of sounds. Both my Engtype and my Glossic have been elaborated in that way. Not merely all English peculiar dialectal pronunciations, but the received pronunciations of Germany, Italy, France, and Spain, can be, indeed have been, written in both modes of spelling, so that a person who had rendered himself properly familiar with them could, without knowing the meaning of a word he himself uttered, read out passages intelligibly to natives. The mode of writing is thus shown to be, as I explained at first, a conventional matter totally distinct from language itself, but when properly constructed forming its real shrine. It is the custom, however, of modern times to read all stages of all languages in the conventional pronunciation of the day. When we hear grave scholars complacently reading Latin and Greek in a pronunciation which really makes them totally different languages from those spoken in Rome and Athens, we can understand why all the past stages of our language are treated in the same manner. But *this* is really making havoc in our literature, *this* is really altering our past language, because, while we retain, (or think we retain) the sense, we alter the sounds to the extent of unrecognisability. We thus reduce English to the state of Chinese, with one written symbol, one court pronunciation, and an unlimited number of often unknown pronunciations in time past and time present. This may or not be desirable. That is not a point which I intend to raise. But it is certainly not orthographical, not etymological, not literary. It is purely ideographical and is the greatest conceivable hindrance to the study of language and the progress of education. It is well known that in our primary schools the extraordinary character of

our present orthography occasions great loss of time in learning to read and spell, which are mere tools for acquiring knowledge in themselves, but without which, under ordinary circumstances, no knowledge can be acquired. It is quite true that by careful treatment, by presenting only its phonetic side first and bringing on its unphonetic irregularities afterwards, it is possible, under careful teachers, to expedite the process of teaching to read. But this very plan of instructing as if the language were phonetically written shows that teachers consider the proper function of orthography to be the representation of sound. How can they come to any other conclusion, where their test of a boy's power is his capability of uttering the expected series of sounds on seeing the printed or written symbols, and his capability of writing the expected series of signs when a series of significant sounds called words are dictated by the teacher. There is, however, another system of teaching, called "The Look-and-Say System," in which each printed collocation of letters, separated by spaces from others, is regarded as a separate sign to be memorised separately, and associated with a certain sound and meaning so closely that, given the meaning, the sound occurs, and given the sound the symbol occurs to the mind, and, conversely, symbol recalls sound and sound meaning. Now as regards sound and meaning this is inevitable, and practically we shall find, if we recur to our own individual experience, that the secondary connection of the sound and sign, taken as a complete word, is the only one which is usual, and perhaps possible, under the circumstances of our present orthography. As I wrote these lines the thought suggested the sound, uttered only mentally, and the mental sound suggested the word so rapidly that my hand traced out the sign without in the slightest degree thinking of its phonetic analysis. If this were not the case, writing would be a far longer and more tedious process than it really is. And this is and must be the case with the most phonetically constructed orthography and with phonetic shorthand, both of which I have been accustomed to use for many years. As long as the mind has to form a judgment upon the nature of the sound to be represented, a very long time is required to write a single word. It is only when the whole sign of the word and its whole sound have been indissolubly connected to the eye and the hand that we can write with sufficient rapidity. In fact, each word must become a familiar friend in all its forms and relations before we can really read and write well. The advantage of phonetic spelling—that is, orthography properly so called—under the circumstances just considered, lies in the fact that it most materially shortens the time necessary for establishing the required connection, and makes the more complicated problem depend upon a number of simple principles. In a word, it reduces an empirical process of the worst kind to a science.

But I have no wish, as I said, to discuss or even raise the question of a Spelling Reform this evening. My object has been to point out what are and should be the relations between orthography and language. I have endeavoured to show, first, that the true function of orthography is to recall and fix the sounds of language and nothing else, and next that this is possible by taking parts of words as sounds to be represented by symbols, and by combining them differently to form the sounds of other words. I have shown that this

was the primitive conception and function of alphabetic writing. Then considering etymology, or the history of words, I shewed that this could have no meaning except as the history of their changes of sound and meaning, and hence could not be traced without a phonetic orthography actually used in language, or artificially substituted in investigations, and that consequently etymology is impossible where such a phonetic orthography cannot be formed at all, and its success is exactly commensurate with the power of partially realising such an orthography. An etymology of mere letters independently of all sound is only a juggle, not worthy of consideration. An orthography which attempts to introduce such an etymology is self-condemned. Finally, I turned to literature, and shewed that to make it living we required to have the key to its signs in a concurrent phonetic orthography, and I shewed that such a spelling left the language untouched. It might be offensive at first to eyes long accustomed to associate particular sounds and signs together, but those are not the people to be considered. They might and would go on with their own habits during the course of their natural lives, unless they really cared enough for the history of their language to acquire the power of using a tool which would make etymology intelligible. But those who have yet to learn, those to whom reading and writing are yet unfamiliar, and those who wish to enter behind the veil which now hides the mystery of language from the eye of the inquirer, these will study a means of representing sounds by letters, and thus of acquiring the laws of the relation and affiliation of spoken sounds on which all in its best resource depends. The coarseness of the problem for the mere practical purpose of conveying thought, contrasts wonderfully with the delicacy of the problem for the real science of etymology and linguistics. Within the last ten years our knowledge has advanced immensely, and the works which now issue from the press display a wonderful advance upon anything previously formulated. But into this I cannot enter at the end of a lecture which has already overstepped its bounds. My purpose will have been gained if I have managed to convey some general conception of the real relation of orthography to etymology and literature.

#### LANCASTER AND BELL.

EVEN before Lancaster commenced work in the Borough-road, he had attracted the attention of several Quakers who helped him by paying for the education of the poorest children. When in a better room, and with a perfected system, he felt so confident of the support of the public that he determined (in 1801) to make his school altogether free. He therefore posted outside the building the following notice:—"All who will may send their children and have them educated freely; and those to whom the above offer may not prove acceptable may pay for them at a very moderate price." He soon had a thousand children around him, and he and his school became objects of much curiosity. "Foreign princes, ambassadors, peers, commoners, ladies of distinction, bishops, and archbishops, Jews and Turks, all visited the school with 'wonder-waiting eyes,' and were equally desirous of carrying home a memorial of the interesting scenes they had witnessed." This caused Lancaster, in 1803, to publish a

short account of his system. The school at the Borough-road was such a success that its supporters wished to see its "picture in little" in various parts of the country. But schools on Lancaster's plan could only be conducted by teachers trained by him; and the demand for such teachers made him, with a characteristic disregard of where the money was to come from, start a training institution. The students were mostly lads from the school, and very badly educated they must have been, but they had caught from their teacher his all-mastering enthusiasm; and, young as they were, they succeeded wonderfully. By the year 1805 the fame of Lancaster had gone forth through all the land, and the king desired to see him. An interview took place at Weymouth. The following is an account of its termination:—"The king said, 'Lancaster, I highly approve of your system, and it is my wish that every poor child in my dominions should be taught to read the Bible; I will do anything you wish to promote this object.' Lancaster said, 'Please, thy Majesty, I can go through the country and lecture on the system, and have no doubt but in a few months I shall be able to give thy Majesty an account where 10,000 poor children are being educated, and some of my youths instructing them.' His Majesty immediately replied, 'Lancaster, I will subscribe a hundred pounds annually; and (addressing the queen) 'you shall subscribe fifty pounds, Charlotte, and the princesses twenty-five pounds each.' Lancaster observed, 'Please, thy Majesty, that will be setting thy nobles a good example.' The example was dutifully followed, for in a list of subscribers, published in 1806, I find the names of the king and queen, followed by those of four princes and royal dukes, six princesses and royal duchesses, seventeen peers, and various peeresses, honourables, members of Parliament, &c. Soon after his visit to the king, Lancaster became ill, and was forced to go into the country to rest. While at Watchet, in Somersetshire, it was suggested to him that he should give a lecture on his system. He gave the lecture, which only proved to be the first of many, for in the course of the next two or three years he travelled through the whole kingdom explaining his scheme. Of the effect of his addresses one may judge from the fact that he found it necessary to publish a book of instructions as to the best routine to be observed in starting a school on his plan.

The success of Lancaster raised him troops of enemies. These may be divided into three classes—the friends of ignorance, the friends of the Established Church, and the friends of both. His patronage by the king and nobility, while it increased the acerbity and excited the envy of his foes, made them very circumspect in their method of attacking him; and as "the law was against his being operated upon by fire,"\* some other mode of assault must be found. They accordingly asserted that Lancaster had stolen the details of his system from Dr. Bell, and (as Sir Fretful Plagiary says) had served them "as gipsies do stolen children—disfigure them to make them pass for their own." The system had merits (how could it fail to have when it was invented by a clergyman?), and these it was which caused his sacred majesty and the hardly less sacred nobles to patronize it. It had, however, one great and damnable fault—it did not teach the dogmas of the Church. As to this same fault I have nothing to say,

\* *Edinburgh Review*, November, 1810.

but I must examine how far the charge made against Lancaster of plagiarism from Dr. Bell is true.

Dr. Bell was a chaplain in the service of the East India Company, and in 1789 he became head master of a charity school—the Male Asylum—at Madras. He had been much struck with a mode of teaching by writing in sand practised by the natives of Malabar, and he determined to introduce it into his school. His assistants, of whom he had four, being grown up, did not take kindly to the innovation, and so he had to teach the new plan to the elder boys, and employ them in turn to teach the younger ones; in other words, he introduced a system of monitors. His monitors, however, did not supersede the assistants; they were created to meet a special difficulty, and used for no other purpose. In 1797, Dr. Bell returned to England, and published, in a pamphlet of forty-eight pages, an account of the methods he had used. He then retired to a living at Swanage. His tract received very little attention, and he did nothing in the matter of education for eight years. Lancaster did not see Dr. Bell's pamphlet till 1800—that is, till he had been carrying on his own experiments for two years. He acknowledged frankly the aid he got from it. He says:—"From this tract I got several useful hints. I beg leave to recommend it to the attentive perusal of the friends of education and youth. I much regret that I was not acquainted with the beauty of his (Dr. Bell's) system till somewhat advanced in my plan; if I had known it, it would have spared me much trouble and some retrograde movements." In 1805, when his system was perfected, and had been displayed at work on a large scale for over four years, Lancaster brought out a third edition of his book. Dr. Bell appears to have been a worthy man, but he seems to have allowed himself to be persuaded that all the credit of Lancaster's work was due to him. He, therefore, after the publication of the third edition of Lancaster's book, brought out a second edition of his own. He suppressed several material facts, and made considerable additions; and in 1807 he published a third edition, when, in spite of suppressions, the pamphlet had swollen to 144 pages. Joseph Fox now wrote—"A Comparative View of the plans of Education as detailed in the Publications of Dr. Bell and Mr. Lancaster," with the epigraph, "*Palmam qui meruit ferat*," and maintained that the palm should be borne by Lancaster. This called out a fourth edition of Dr. Bell's work, in which the original 48 pages had become 348. In the following extract, from the number of the *Edinburgh Review* already quoted, the dispute between Lancaster and Bell is calmly and judiciously summed up:—"The merit of devising it (the new system) belongs to Joseph Lancaster, although one of its principles had been previously known to Dr. Bell, and exemplified in the school at Madras, but without those other principles which, when taken together, constitute the new system. . . . To Joseph Lancaster alone belongs the praise of introducing the new system into practice, and enabling mankind to benefit by it, and preparing the way for its universal reception. . . . The plan pursued by Dr. Bell . . . has no one peculiarity which can entitle it to a preference; while, on the contrary, it is deficient in many of the most important points, and especially fails in the article of economy." In another part of the same article the writer says:—"We deeply regret to find that Dr. Bell has not had the prudence

and good sense—we say nothing of generosity or courage—to allow this simple-minded and most deserving man (Lancaster) a merit which he cannot by any stretch of self-complacency pretend to dispute with him. And herein lies the charge which we are unwillingly compelled to admit has sunk most in our minds against that reverend person. We could have pardoned the senseless distinction between teaching writing and reading, and passed over the alarm lest the minds of the lower orders, 'who are doomed to the drudgery of daily labour,' should be too much elevated by instruction. . . . But when we find Dr. Bell printing book after book to explain his system—years and years after Mr. Lancaster had, by the most unvaried exertions, . . . succeeded in carrying every one principle of the scheme into complete practical effect, and in spreading the beneficial use of it over the whole island; and when in those books Dr. Bell does not even make mention of Mr. Lancaster, offers him no acknowledgment for his corporal fatigues—we will go no further; tenders him no thanks for having (we will call it) taken the trouble of adopting and disseminating his doctrines; presents to him no congratulations upon the unlooked-for success which had attended his preaching and practice of those doctrines—may, deigns not even to record the fact so important to his own fame, that the Madras system had wonderfully prospered in England under the management of one Joseph Lancaster. . . . truly this silence is too unnatural even to be mysterious, and in our ears—do all we can to shut them, to stop them up with the remembrance of the man's former merits—it loudly rings a distinct charge against the reverend gentleman of pitiful jealousy towards one whom he may be desirous of thinking his imitator, but towards whom he thus betrays the wounded feelings of a disappointed rival." The controversy between the friends of Bell and Lancaster was fierce and bitter enough, but we can look at it with philosophic unconcern, for we can see that the antagonism was of immense service to the cause of education. The clergy were frightened at the success of Lancaster's plans, and, as it was evident schools must spring up all over the land, nothing remained for the clergy but to get the management of them into their own hands. In Dr. Bell they had ready to hand a means whereby they could "at once dole out to the lower orders that lower degree of knowledge which best befits their station, and that peculiar kind of instruction which most exactly suited their own interests and opinions." The consequence was the establishment of the National Society for the education of the poor in the principles of the Established Church. There were thus two educating societies where, without the rivalry of Lancaster and Bell, there could only have been one.

I have said that Lancaster's enemies made two charges against him: the first, that any part of his system which was meritorious was stolen from Dr. Bell; the second, that the part which was admitted to be his own—the nonsectarianism of the religious instructions—was an awful evil. I have dealt with the first charge. It would be difficult for us to apprehend the rancour with which he was attacked in the second, had we not in these days heard the education given in the schools of the London Board described as "godless." Deacons and archdeacons thundered at him from the pulpit, fools and fanatics denounced him through the press. One of the first to raise the howl

against him was Mrs. Sarah Trimmer—a lady who was tolerably well known as a writer of schoolbooks, and “goody-goody” stories. To give my readers a specimen of the bigotry and ignorance with which he was attacked, I will make a few extracts from this respectable lady’s book. She says: “In answer to Mr. Lancaster’s observation that ‘it [education] ought to be a national concern,’ I may appeal to the Act of Uniformity for the proof that, from the first establishment of the Protestant Church in this kingdom, education *has been a national concern.*” Sydney Smith, in the *Edinburgh Review*, criticised the work in an article,\* where, as usual with him, the shafts of sense were pointed by wit. On the remark I have just quoted from Mrs. Trimmer, he says: “If there are millions of Englishmen who cannot spell their own names, or read a signpost which bids them turn to the right or left, is it any answer to this deplorable ignorance to say there is an Act of Parliament for public instruction?—to show the very line and chapter where the King, Lords, and Commons, in Parliament assembled, ordained the universality of reading and writing, when centuries afterwards the ploughman is no more capable of the one or the other than the beast he drives?”

(To be continued.)

#### APPOINTMENTS, &c.

Mr. E. P. Metcalfe, M.A., to be Principal of the Provincial College of Rajahmundry, and pending further orders to act as Principal, 3rd Class.

Mr. J. B. Bilderbeck, B.A., Professor of History, Presidency College, 4th Class, substantive *pro tem.* to act as Professor of English Literature, Presidency College, during the employment of Mr. Thompson on other duty—with effect from the 5th instant.

Leave.—The Acting Director of Public Instruction has granted sick leave of absence to Mr. David Joseph, Head Master, Normal School, Vizagapatam, for four months, from the 7th August 1878.

From the 16th July 1878 to 15th August 1878.

C. Sadagopa Chetty, B.A., to be Second Assistant Master, Zillah School, Kurnool, on Rs. 60 per mensem, substantive *pro tem.*

S. Venkatanarayana\* to act for Balakrishna Naidu, 1st Assistant Normal School, Vizagapatam, on Rs. 35 per mensem.

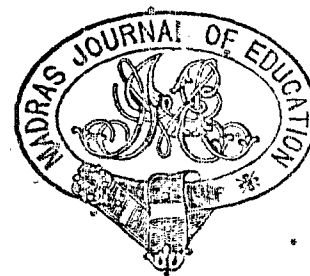
K. Sankaraya, Acting Head Master, Anglo-Vernacular School, Chingle, to be Second Assistant, Zillah School, Berhampore, on Rs. 70 per mensem, substantive *pro tem.*

#### MISCELLANEOUS.

THE NEW PRONUNCIATION OF LATIN.—A correspondent of “Notes and Queries” writes:—“I have much pleasure in reporting an anecdote, not yet, so far as I know, in print, of which the present Bishop of Manchester is the hero. A class of school-girls, says the story, highly educated on the ‘newest principles,’ were pouring forth to his lordship a list of Latin words, with the English equivalents; and they came to the word which we elders should call *vicissim* meaning ‘alternately.’ ‘We-kiss-in,’ said the girls; ‘we kiss-in—by turns.’ ‘Oh, do you?’ answered the bishop: ‘then I don’t at all wonder at your adopting the new pronunciation.’”

\* The king was so pleased with this article that he made Sir Herbert Taylor read it twice to him.

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#### THE MONTH.

We learn from the last Report of the Madras School Book and Vernacular Literature Society that their large and important Telugu Dictionary is making fair progress. Pages 384, as far as the letter *—* have been printed, and it is hoped the work will be completed before the issue of the next Report.

Owing to the illness of the Editors first appointed, the progress in bringing out the portions of the Ramayana and Mahabharata has been but slow; the *Bala Kanda* of the Tamil Ramayana is however completed, and new Editors, having been appointed, it is hoped that the work will now go on more rapidly. The Tamil *Ayodhya Kanda* has already been set in hand.

During the year, the Tamil Translation of the first part of the Sanskrit work called the *Dasakumara Charitram* has been published, and as the work was prescribed by the Syndicate of the University for the Matriculation Examination, the sales have been large. Mr. Ramaswami Raju’s Translation of Lamb’s Tale of *Cymbeline*, Pandit Srinavasa Raghavachari’s adaptation of the Sanskrit Drama of *Ratnavali*, and Mr. Ambil Venkatachari’s adaptation of *Sakuntala* have been published in Tamil, while in Telugu, the Tale of *Sinbad the Sailor* has been published from *The Arabian Nights Entertainments* under the editorship of the late Mr. C. Subrayalu Naidu, Lamb’s Tale of the *Merchant of Venice*

has been translated by Mr. Nageswara Sastri, and *The Tale of Five Thieves* has been translated from the Tamil by Mr. Komanduri Anantachari. In Hindustani, the tale of *Ala ul din* from *The Arabian Nights* has been published under the editorship of Mr. Suliman Sahib.

"With regard to Education, Plato held the opinion of the worse than uselessness of science and knowledge without good bringing up, without a good tendency given to the aims and thoughts of the pupil. Thus we might put a boy through all the educational exercises usually required, through music, arithmetic, geometry and astronomy and yet throughout give him an evil 'leading,' making all these studies conducive to the gratification of ambition or the acquirement of wealth. Plato means that we had better leave him in total ignorance than do this." Alas, to how many of our Hindu pupils is the acquirement of official position and the acquisition of wealth the only inducement to study! Why do so few study Sanskrit the language which they all profess to love? Why, but because it does not pay? English as they say more forcibly than elegantly is the "belly language" i.e., the language that brings in the loaves and the fishes, government appointments, position and authority,—and knowing this, they throw to the dogs their Vernacular Literature, and also the literature they profess to reverence as sacred. Pious Hindus lament that the *Vaidika* Brahmins, so long supposed to be wholly devoted to religion, are bringing up their sons in English schools, and dissuading them from studying Sanskrit in the *Padasalas*, choosing for their sons that they should not have the honour of making sacrifices for their sacred literature and religion, but that they should enjoy the pleasures of office for a long season. To how few of our pupils, studying in this frame of mind, can the good tendency, required by Plato ever be given!

**SCHOLARSHIPS FOR INDIAN GIRLS.**—The Committee of the National Indian Association has arranged some scholarship grants for Native Girls in India. The first appeal for that object was made by Lady Anna Gore Langton, who last December, at a drawing-room lecture which she delivered at Clifton, collected from those present, for two "Mary Carpenter" Scholarships, tenable for three years, in the Mahomedan Girls' School at Madras. Since then the Committee, after communicating with the Directors of Public Instruc-

tion and the Secretaries of the Branches in India, have resolved to appropriate some of their funds, and to try to obtain special contributions towards scholarships for girls in different parts of India. They have been informed that such scholarships are likely to have a useful effect, and may, particularly if recognised through their name as of English origin, arouse considerable enthusiasm. The grants are to be made in connection with Government schools and efficient schools established by native effort, irrespective of creed. This scheme is regarded by the Committee as an experiment, other methods of encouraging female education of a sound kind in India may in the future seem more likely to be effective, but it is hoped that, under careful regulations, scholarships will prove of real use, in securing education for some girls who would otherwise have been left to ignorance and aimlessness, and as an expression of English sympathy in the progress and culture of Indian ladies.—*Journal of National Indian Association.*

A REVIEWER of Mr. Cruttwell's recent book on Roman Literature congratulates the writer that he has not been seduced into the modern and pedantic mode of writing the author of the *Æneid's* name "Vergil." "Vergilins" is undoubtedly correct in Latin; but there is no more reason, in the Anglicised form of the name, for abandoning the familiar "Virgil," than for the French to change their "Virgile," or the Italians their "Virgilio." We observe that since 1875, the Calendar of the Madras University adopts the unfamiliar spelling of the name to which the conservative reviewer objects.

A REWARD of Rupees 500 has been offered by the Government of India, for the best Sanitary Primer suitable for use in Indian Schools both English and Vernacular. The work must be in the English language from which it will afterwards be translated into the principal languages of India: it must be simple, without theories and thoroughly practical, shewing in particular the chief sanitary defects of Indian towns and villages and the best means of remedying these defects: and it must not cover more than from 24 to 30 pages of print of Small Pica, octavo size. Competing primers either in print or very legible manuscript are to be sent to C. Bernard, Esq., Secretary, Government of India, so as to arrive not later than the 1st April 1879, at the Home Office,

Calcutta. Each should bear a motto, and have a sealed envelope attached with the same motto outside and the name of the Author within.

The Acting Director of Public Instruction has requested the sanction of Government for placing a statue of Mr. E. B. Powell, M.A., C.S.I., late Director of Public Instruction, in the Entrance Hall of the Presidency College. In 1875, just previous to his final departure from India, Mr. Powell was permitted by Government to receive publicly an address from his former pupils and the native community generally in recognition of his great services to native education. The address was only a small part of the testimonial intended to be presented by his pupils and native friends, the funds raised at the time being expended on a statue by Mr. Adam Acton, which the Subscribers wished, with the sanction of Government, to erect in the Presidency College, the Institution with which Mr. Powell was so long and so honorably connected. The statue has now arrived, together with the pedestal on which it is to be placed, and at the request of the Secretary of the Powell Testimonial Committee, the Director allowed the cases containing them to be placed in a corner of the Entrance Hall, pending the sanction of Government being given to the erection of the statue on a spot to be fixed by the Government Architect. Government have accordingly sanctioned the erection of the statue on the North side of the Entrance Hall of the Presidency College. — *Madras Mail*.

The question whether the children of dancing girls and other professional women in India should be allowed to attend Government Schools is regarded by the Home Government as one of considerable importance. The Secretary of State has, therefore, in a communication to Madras on the subject expressed a desire that it may be referred to the Government of India for consideration, after consultation with the various local Governments and Administrations.

We have to thank a Subscriber for calling our attention to certain errors in Multiplication which vitiate the results of the Arithmetical Solutions forwarded us by a Subscriber and published on pages 68-71 of this volume.

To the same Subscriber we are indebted for the following neat Solution of Question V in the F. A. paper given on page 65.

The number of men is to the number of women as 1 is to 4. But as the sums subscribed are in the squares of these numbers, the annas subscribed by these men : the number of pies subscribed by the women :: 1 : 16. ∴ For each anna subscribed by the men there are  $1\frac{1}{4}$  or  $1\frac{1}{4}$  annas subscribed by the women. ∴ The sum subscribed Rs. 756 is to be divided into parts proportionals to 1 and  $1\frac{1}{4}$  then the sum subscribed by the men is  $\frac{4}{7} \times 756$  or 324, and that subscribed by the women  $\frac{3}{7} \times 756$  or 432.

But each man has subscribed as many annas as there are men. ∴  $324 \times 16$  annas represent the square of the number of men.

∴ Number of men  $\sqrt{324 \times 16}$  or 72 and the number of women  $72 \times 4$  or 288.

The answer to Question III of the same paper is 21 not 101, for the number must be an integer.

ERRATA in the Solutions on pages 68-71. In the Solution to the first question the only error committed concerns the last multiplication.

Rs.  $12.4 \times 1062$  gives Rs. 13069.8 instead of Rs. 12760.9-6.

In consequence of this alteration the remainder is Rs. 13000.8, minus Rs. 12405-10-3 or Rs. 603-13-9, answer.

In the VIIth sum, 2nd line, the product of 1s. 8 $\frac{1}{2}$ d. by 18240 is £1,577 instead of 978 $\frac{1}{2}$ . The answer becomes in consequence of that correction £49 10s.

The last answer too, is not correct, the product of  $13 \times 210$  is 2257 $\frac{1}{2}$ , ∴ 2287 $\frac{1}{2}$  is a mistake, and the answer is 4 $\frac{1}{2}$ , instead of 4 $\frac{3}{4}$ .

### SOLUTIONS

(For the Questions, see page 65.)

We have received the following Solutions to the questions proposed by Culex on page 55 of the Journal for February.

I. Find the least multiple of 7 which when divided by 9 leaves 8 as a remainder.

Stated in other words, this problem is to find the least multiple of 9 that diminished by 1 will be exactly measured by 7.

Now as the excess of 9 over 7 is 2, it is evident that 4 times this excess will when diminished by 1 exactly = 7, i.e., 4 times 9 = (4 times 7) + 4 (times the excess.)

But 4 times the excess = 7+1

∴ 4 times 9 = 5 times 7+1 and therefore the least multiple required is 35.

II. Five pounds of mercury at 80° centigrade are mixed with 2 lbs of ice-cold water, and the temperature of the mixture is 6 $\frac{2}{3}$ ° centigrade; find the specific heat of mercury.

Let  $x$  denote the unknown specific heat.

Then since the mercury has been reduced from 80° to 6 $\frac{2}{3}$ °, we have thus a loss of  $73\frac{1}{3}$ ° in 5 lbs of mercury; also the gain of the water will be  $6\frac{2}{3}$ °  $\times$  2 units of heat (the specific heat of water being unity). Now as the operation is supposed to be conducted so as not to lose any heat, it is evident that the loss of heat by the mercury equals the gain by the water.

Units of heat to raise 1 lb of mercury 1° =  $x$

∴ do do 5 do  $73\frac{1}{3}$ ° =  $x \times 5 \times 73\frac{1}{3}$

But the heat is lost by the mercury and gained by the water, and we know the water has gained  $6\frac{2}{3}$ °  $\times$  2 units of heat.

∴  $x \times 5 \times 73\frac{1}{3}$  =  $6\frac{2}{3} \times 2$

i.e.,  $x = \frac{1}{30} = .03$  Answer.

### EDUCATIONAL NOTES FROM CEYLON.

The Governor, Sir James Longden, has lately presided at the prize-givings of three important institutions in Colombo. In the course of his speech at St. Thomas' College, he dwelt at some length on the evils arising from irregular attendance at school, and made some general remarks on the great value of such institutions as St. Thomas' in the great work of educating the natives of Ceylon. The warden, the Rev. Mr. Miller, in moving a vote of thanks to His Excellency, referred to the connection of the College with the Cal-



cutta University and intimated that the affiliation was not by any means an unmixed good. It seems that our educationalists are beginning to see that the training required for a *foreign* University, is not that which is most needed for "Young Ceylon." And Calcutta is decidedly as foreign to Ceylon as any place can well be. Neither of the Vernaculars of the island are taken into the University course, and all the text-books and the course of studies prescribed seem to have been made without any reference to the educational requirements of Ceylon. The same cannot be said of the Madras University. There are already hints in the newspapers of the necessity for a University of Colombo, and I have no doubt that it will come to that before long. The present Acting Director of Public Instruction, whom we hope to see confirmed in his appointment, will not be slow to recognize the necessity, if we may judge from his reports.

At the Colombo Academy the old question of science *versus* classics cropped up in the speeches delivered at the prize-giving. The recent appointment of a science teacher brought it up. The Governor congratulated the Academy on the acquisition to its teaching staff, and proceeded to speak of the importance of an education in science. At the same time he would call their attention he said to what had been done in the world by men celebrated for their classical attainments, and how useful a training such studies had proved. This opened the case. The next speaker was the Honorable, the Queen's Advocate, who is one of the men celebrated for classical attainments, as far as Ceylon celebrity goes—and he appeared for classics, making out a pretty strong case, dwelling much as the Governor had done, on the value of classical studies as a training of the mind. Sir M. Coomara Swamy was the next speaker, and he evidently held a brief for science, contending that it was mainly the want of a scientific education, *i.e.* of natural science instruction and a training in art that had caused the degeneration of the Eastern nations. He did not wish to under-rate an education in Greek and Roman classics. He had been trained in them himself in the very room in which they were then standing, but he thought that English ought to be regarded as affording the most appropriate classical training for the schools of India and Ceylon. It should be the only Western classical language for the native student of the East. A great many people will agree with Sir Coomara Swamy who has for some time past advocated from his seat in the Legislative Council and elsewhere, the general introduction of science teaching into our schools. It is to be hoped that the Government will do something more towards meeting the demand for this kind of instruction than just appointing a science teacher to one or two schools in Colombo. We shall see what provision will be made for it in the new Grant-in-aid Code.

The Ceylon Medical school concluded what appeared from the Principal's Report to have been a very successful session on Thursday, August 22nd, with the usual festivities. The Governor was present on this occasion also as well as Sir Coomara Swamy. Here, of course, science occupied considerable attention. His Excellency dwelt upon the great advantages afforded in Ceylon for the study of Botany and implored the young men present to avail themselves of the opportunities that were given them to distinguish themselves in a very important branch of study and to benefit their fellow-creatures.

Sir Coomara Swamy referred to the Universal application of the

science of Medicine, as one of the great advantages of the profession; other professions were limited in their sphere of action, this was not. He followed up the Governor's remarks on Botany by urging the students to lay themselves out for the discovery of new medicinal plants.

An affecting account was given by the Principal, Dr. Venderstraten, of the deaths of the late Principal, Dr. Koek and the demonstrator of Anatomy, Dr. Tillainuttu Evert's death in each case being the result of a wound in dissecting. A "Koek Memorial Prize" had been established by the late Principal's friends and admirers, worth Rs 60 per annum, of which Mr. G. F. Anthoniz was the first holder. The Government has founded a scholarship in connection with this school of the annual value of Rs 500, open to all natives of Ceylon who shall have matriculated and passed the First Examination in Arts of the University of Calcutta. "Only one candidate came forward this year but he was above the prescribed age."

Some soreness was manifested at the time of the last entrance examination for the Medical school by the Academy students. The school dispenses with the entrance examination in the case of an undergraduate of any Indian University. The Academy is the principal Government school in the island but it is forbidden by Government to prepare boys for the Indian Universities—at any rate it has broken off from the Calcutta University to which it was formerly affiliated, probably for reasons hinted at above. Such a regulation as that of the Medical school is certainly hard on the Academy, and is not very consistent with the Government Policy in breaking off its connection with the Calcutta University.

The Director of Public Instruction in place of Mr. A. Y. Adams has not yet been appointed—Mr. C. G. Colson, Inspector of Schools, is acting.

Mr. G. Todd, the Principal of the Colombo Academy, it is rumoured, will not return to the island.

The managers and teachers of Mission schools are looking forward anxiously to the approaching meetings of the Legislative Council. It is expected that the revised draft of the code for Grant-in-aid schools will be laid on the table and brought forward for discussion at an early date. We hope that it will receive the attention from our legislators which so important a subject as elementary education demands.

INSPECTORS.—A circular to H. M. Inspectors of Schools in England has been issued from the Education Department, containing additional instructions with respect to the duties of Inspectors, which have been rendered necessary by recent educational legislation. This important circular contains directions as to the relations which should subsist between Inspectors and School Attendance Committees, the observance of the Time Table, Conscience Clause, moral training in schools, the choice and instruction of pupil teachers, the checking of registers, night schools, and the inspection and examination of schools in the receipt of Government grants. We commend the careful consideration of these instructions to our readers. As a rule, there is very little contained therein with which they will not be able heartily to agree. The circular shows, on the side of the Department, a spirit of justice and consideration which cannot fail to be highly appreciated by teachers. Several things for which we have earnestly striven are allowed; and their practice enjoined upon all H. M. Inspectors.

For example, they are directed, in consideration of the obligation upon girls to learn needlework, not to apply to them the same standard of proficiency in the examination of arithmetic as to boys. Inspectors are reminded that it is no part of their duty to find fault with or to reprove a teacher; and that, above all, it is incumbent upon them to show, by their manner in examining, that the main object of their visits to a school is to elicit what the children know, and not to prove their ignorance. They are instructed not to frighten or confuse children by their harsh, impatient, or indistinct manner of questioning; nor to puzzle them by fanciful or unreasonable questions. For such directions as these, as also for many other parts of this circular, teachers will feel deeply grateful. The good feeling which at present exists between them and the Department will be strengthened, and they will henceforth regard with increased confidence the Education Office as so ably administered by Sir Francis Sandford. —*The Schoolmaster.*

### EXAMINATION PAPERS.

*Free Church Institution and Mairns Christian College.*

F. A. CLASS.

#### TRIGONOMETRY.

I. Show that when  $\theta$  is a positive angle less than  $\frac{\pi}{2}$ ,  $\sin \theta$ ,  $\theta$  and  $\tan \theta$  are in ascending order of magnitude; thence find the limit of  $\frac{\sin n^\circ}{n}$  when  $n$  is diminished indefinitely.

II. If the sines of all angles up to  $60^\circ$  have been found how can the sines of the remaining angle be most easily obtained?

Given  $\sin 50^\circ = 0.766044$  and  $\sin 70^\circ$

III. If the sun's distance from the earth is  $92 \times 10^6$  miles and its diameter subtends at the earth an angle of half a degree what is the least possible diameter of the moon distant  $24 \times 10^3$  miles from the earth that it may just cover the sun during an eclipse?

IV. Define a logarithm and prove that

$$(1). \log m^r = r \log m.$$

$$(2). \log_a m = \log_a n \times \frac{1}{\log_a b}$$

V. Expand  $\log_e (1+x)$  in ascending powers of  $x$  and from the series obtained deduce a formula suitable for the calculation of logarithms.

VI.  $\log 3 = 0.47712$   $\log 2 = 0.30103$   
find  $\log 169$  to 3 decimal places.

VII. Given  $\log 7 = 0.84510$   
find  $\log 315$  and  $\log (42 + 21 + 77)$ .

VIII. Find the value of  $(1386)^{\frac{1}{3}}$   
Given  $\log 11 = 1.04139$ ;  $\log 153.04 = 2.18481$ .

IX.  $y = c^{\frac{1}{1-\log x}}$ ;  $z = c^{\frac{1}{1-\log y}}$  find  $x$  in terms of  $\frac{1}{z}$

X.  $\left. \begin{aligned} y + z &= ac - a^2 \\ y + z &= ae^x - a^2 \end{aligned} \right\} \text{prove that}$   
 $x = \log_e (ae^x - a^2) - \frac{1}{2}$

F. A. CLASS.

#### CÆSAR.

I. What were the natural causes of Hostility between Cæsar and Pompey?

II. What districts are meant by Cisalpine and Transalpine Gaul?

III. State reasons in favour of the "Commentaries" being the work of Cæsar.

IV. Quote Cicero's estimate of Cæsar's writings and Lucan's opinion of Cæsar himself.

V. On what grounds can Cæsar's treatment of his enemies be defended?

VI. Tabulate the Gallic tribes and the leaders on both sides engaged in the Second and Third years of the War in Gaul.

VII. Describe very briefly the peculiarities of Gallic, German and British military manœuvres.

VIII. Where and on what occasion did Cæsar build a great bridge?

IX. What fables apply to the conduct of the Gallic and German tribes?

X. Explain the incidents referred to and the allusions used in the following:—

(a) "Many hecatombs had been offered up to the shade of his father-in-law's grandfather."

(b) "From his tongue, as from Nestor's, could flow words sweeter than honey;"

(c) "The Belgian lambs disturb the stream very sadly."

(d) "Titurius Sabinus, destined afterwards to a sad end."

XI. What is meant by the following:—

(a) "Thus and no otherwise could the lamb be brought to a better than a sheepish mode of existence."

(b) "Nor did Fortune diminish this gratification by any calamity inflicted on the man."

(c) "Had a 'Times' been then written and filed."

XII. Give the Modern Names corresponding to the Suesiones, Treviri, and Veneti. From what place did Cæsar embark for Britain?

*Presidency College.*

F. A. CLASS.

#### CÆSAR.

I. What meaning do you attach to the assertion "Caius Julius Cæsar is the greatest name in history?"

II. Briefly describe (a) the revolt and defeat of Ambiorix (b) the siege of Gergovia.

III. What were the mistakes made by Cæsar and Pompey in the engagement at Petra and in the battle of Pharsalia?

IV. (a) "Cato in these days was simply ridiculous"—Explain. "Cæsar could bear no superior and Pompey no equal." How far is this assertion true?

(b) Had Pompey any settled policy throughout his career? Contrast Cæsar's character with that of his rival.

V. Explain the following :—

- (a) A case of the lamb troubling the waters with a vengeance.
- (b) Caesar scorns not to give the barbarian the benefit of his logic.
- (c) The reader expects nothing worse for Caesar than hair-breadth escapes.
- (d) A licensed collector of grumbles.
- (e) Caesar was caught napping.
- (f) All winds filled his sails.
- (g) Bibrax, now known, or rather not known, as Bierre.

VI. Write in the form of a fable the story of the man and the horse.

VII. Explain the allusions in the following passage :—

Cæsar and the Cæsareins were to him (Pompey) as the spirits of the revolution were in France to Louis XVI, to Charles X and to Louis Philippe before they had made their powers credible and formidable; as the Reform-Bill and the Catholic Emancipation were to such men as George IV and Lord Eldon, while yet they could be opposed and postponed.

E. A. CLASS.

### SCOTT'S ESSAY ON CHIVALRY.

I. Mention (1) one very important feature of chivalry, and (2) two or three of its minor practices, that may be traced to the customs of the German tribes.

II. Give the derivation and changes of meaning of the following words :—chivalry, esquire, acolyte, enrass.

Explain the following words :—outrance, melec, pas d'armes, accolade, itinerant.

III. Quote any facts which show (1) the extensive rights possessed by women among the German tribes; (2) the great influence exercised by them and the high regard in which they were held.

IV. "Extremes of every kind border on each other."

How is this statement illustrated in the essay?

Give another illustration of your own.

V. Quote any incidents which show in a ludicrous form the following characteristics of the knights of chivalry—(1) their fanatical hatred of infidels; (2) their fanatical love of glory.

VI. Modernize the following :—

He was of a fyftie yere of age and nynce.

He gave fyve florins in small monies at his gate to poore folkes.

There was none should speke to hym at his table, but if he were called.

And or I came to his court I had been in many courtes of kynges erles and great ladyes but I was never in none yt so well liked me, for ther was none more reioysed in dedes of armes than the erle dyde.

Point out a defect in the following sentence and re-write it correctly :—

And excepting only the change which flowed from the introduction

of the Christian religion, we know no cause which has produced such general and permanent difference betwixt the ancients and moderns as that which has arisen out of the institution of chivalry.

VII. What is meant by a judicial combat?

Explain the statements that this law was "absurd in itself" but that its injustice was mitigated by the institutions of chivalry.

Was there anything to deter a knight from taking up a bad cause?

VIII. Explain :—

He did the honours of the household to strangers.

Ha! ha! the white swan.

By God his soul, I am thy man.

Who (ladies) were worshipped, like heathen deities, with human sacrifices.

The Lady Bountifuls of the last generation.

We shall greatly err if we suppose that the adventures told in romance are as fictitious as its magic, its dragons and its fairies.

IX. Explain very briefly how each of the following circumstances contributed to the decay of chivalry :—

(1) The discovery of gun-powder.

(2) The institution of regular bands of men at arms.

(3) The civil arms in England and France.

X. Write etymological notes on the following words :—

Rather, first, second, worship, manly, shamefaced, neighbour, harbinger.

XI. Re-write the following, substituting other phrases for those in italics :—

I had some hopes that my friend would be able to *put me up*, but it so happened that *his house was full* at the time of my visit and he could not *take me in*. I then went to an hotel kept by one A, where I was much *put out* by the bad attendance, and *made up my mind* not to *put up with it* any longer. Finding the bill excessive, I sent for the manager and *took him severely to task* saying that his charges were as much *above the mark* as his accommodation was *below it*. He said he was *at issue with me* on that point and refused to *give way*. I paid the bill feeling that I had been very much *taken in*.

Free Church Institution and Madras Christian College.

### SCOTT'S ESSAY ON CHIVALRY.

I. Give a summary of the references made in this essay to the *Canterbury Tales* and to *Don Quixote*, explaining them. Give the date of the death of the respective authors.

II. Give the etymology of *esquire* and the primitive sense of the word. Enumerate the personal exercises in which he was disciplined.

III. Explain or illustrate :—(1) Knight-banneret may rather be accounted an institution of policy than of chivalry. (2) It was the genius of chivalry to carry every virtuous and noble sentiment to the most fantastic extremity. (3) The degree of baronet might have been termed an inferior rank of noblesse rather than an order of chivalry. (4) hanged, drawn and quartered—*point d'erde*—landless—resolutes—quintaine—*hight*—at *outrance*—*Cour Pleniére*—*jacquerie*—blazoury.

IV. (a) Express the following (1) by using the positive degree, (2) by using the superlative :—"Nothing can be more alien from the

original idea of chivalry than that knight-hood could be bestowed on an infant."

(b) Bring out the force of *at least* by means of clauses:—(1) The romances which were the favourite reading of the time, or which, at least, like the servant in the comedy, the nobles 'had read to them' &c.

V. (a) Distinguish:—pennon, pennoncelle, banner; knight, baronet. (b) What is the object of heraldry? Describe each part of the Royal Standard.

VI. How did the rank of knight-bachelor fall into disrepute and what means was used to counter-act the evil thus produced?

VII. Give the history of the Teutonic Knights and state what place they have in the argument of the Essay.

VIII. What was the ostensible and what the real reason why James I created so many baronets?

IX. State the circumstances in which a knight might be degraded.

*S. P. G. High School, Trichinopoly.*

*Macleay's Physiology.*

F. A. CLASS.

# CHAPTERS I to VI.

(Time—3 hours.)

1. Of what does the science of Human Physiology treat?

2. Explain clearly what constitutes (1) Life.

(2) Death? *a* Local.

*b* General.

3. Explain how the circulation is carried on in the human body, stating carefully (1) the functions of the auricles and ventricles, (2) the difference between veins and arteries.

4. What are the constituent parts of human blood, and what is its function?

5. "When a man is strangled, drowned or choked—Asphyxia comes on"—Explain the process.

6. Enumerate the *incessantly active* sources of (1) Loss, and (2) Gain to the Blood.

7. Explain the process of Digestion in the human body.

8. State briefly the functions of (1) the nerves, (2) the muscles (3) the lymphatics.

9. Give the derivations of the following words, and a brief account of each:—Skeleton, Pulse, Corpuscle, Glyme, Chyle, Epiglottis, Pylorus, Duodenum, Diaphragm.

*Free Church Institution and Madras Christian College.*

MATRICULATION CLASS.

# ENGLISH TEXT.

I. (1)

(a)

The bell from its turret  
Sprinkled with holy sounds the air, as the priest  
with his hyssop  
Sprinkles the congregation, and scatters blessings  
among them.

(b) "And, now I think, he *shall* not have the boy,  
For he *will* teach him hardness."

(c) "It cannot be: my uncle's mind will change!"

Account for the tense of the italicised verbs in (a), give the force of the auxiliaries in (b), and say what the meaning of (c), would be without the colon.

(2) State what each of the forms in *ing* is in the following instances:—

(a) He could not ever rue his *marrying* me.

(b) A *threshing* floor.

(c) When she had *passed*, it seemed like the *ceasing* of exquisite music.

(d) Heavily closed with a *jarring* sound the valves of the barn doors.

(e) *Wiping* the foam from his lip, he solemnly bowed and departed.

(f) *Pawing* the ground they came, and resting their necks on each other.

II. (1) Render each of the italicised expressions by a single word:—

(a) She is my *brother's daughter*.

(b) And serenely the sun *sank down* to his rest.

(c) Black were her eyes as the *berry that grows on the thorn*

*by the wayside*.

(d) Once in an ancient city whose name I *no longer remember*.

(2) Explain:—Off the latch—To be up and doing—Week in, week out—Variant breezes—Feathered seraglio—Plain-song—To rule with an iron rod—The king-row—natural make and temper.

(3) Give the meaning of the following extracts in your own words:—

(a) Men whose lives glided on like rivers that water the woodlands,  
Darkened by shadows of earth, but reflecting an image of heaven.

(b) All his thoughts were coagulated into lines on his face, as the vapours  
Freeze in fantastic shapes on the window-panes in the winter.

(c) Life had long been astir in the village, and clamorous labour  
Knocked with its hundred hands at the golden gates of the morning.

Quote the passage in which Longfellow hints at the derivation of the name Grand-Fire.

III. (1) Explain the allusions in—

(a) Such as the peasants of Normandy built in the reign of the Henries.

(b) Flashed like the plane-tree the Persian, adorned with mantles and jewels.

There are several allusions in Evangelinè to events recorded in Scripture. Quote two passages in which such allusions are made.

(2) Point out and name the figures of speech in the passages below, and give another example of each of these figures from your text:—

- (a) But their dwellings were open as day and the hearts of their owners.  
 (b) Then he turned His face and passed.  
 (c) Rose the guests and departed; and silence reigned in the household.

Mention an instance of paradox in *Evangelina*.

- (3) Divide the following lines into feet, and mark the accented syllables:—

- (a) I had been a patient wife but sir he said.  
 (b) God bless him he said and may he never know.  
 (c) Life is real! Life is earnest!  
 (d) White as the snow were his locks, and his cheeks as brown as the oak leaves.

- IV. Give a short account in your own words of—

- (a) Scott's visit to Bath.  
 (b) The recovery by Mr. Banks of the quadrant stolen by the natives.

V. (1) Explain:—To leave her heart behind her—To make up his lee-way—A labour of love—A hop-step-and-jump perusal—Strength of understanding—To watch his opportunity—Having struck our tent—Being now master of his disease.

- (2) Bring out by paraphrase the meaning of:—

- (a) He combined the highest and most airy temper with the best and kindest disposition.  
 (b) They please rather by unison than by concord.  
 (c) We could not have proceeded, if way had not been made for us by a tall well-looking man, who had a long white stick in his hand, with which he laid about him at an unmerciful rate.

VI. (1) Write short notes on *The Knight of La Mancha*—*The Augustan age of Queen Anne*—*The Wells Bladud*—*Bunyan's Pilgrim*—*The Presbyterian Ulysses*.

- (2) In what connexion do the following passages occur in your text?

(a) Moses's bargain of green spectacles did not strike more dismay into the Vicar of Wakefield's family, than my grandfather's rashness into the poor old shepherd.

(b) They not unfrequently doffed the world aside and bid it pass.

(c) The whole scene realised the poetical fables of Arcadia.

VII. (a) An unnecessary apprehension of contingent misfortunes.

(b) But show me an old castle, and I was at home at once.

(c) I have guarded against nothing more in the education of my family, than against their acquiring habits of self-willed caprice.

Substitute simpler words for the italicised words in (a). Change the first clause of (b) into one of condition, and change the degree of *more* in (c).

- VIII. Parse the italicised words in the passages below:—

(a) Considering *who* they were *who* employed it in their compositions.

(b) Instructing by signs, *that if* that would atone for the wrong *that* had been done, he might take any part of it.

(c) He were *but* little nearer than we had been the night before; *but* about seven a breeze sprung up.

# IX. Criticise:—

(a) The most unfortunate accident, and which proved the remote cause of her death, was her cap accidentally taking fire.

(b) If my studies were not under any direction at Edinburgh, in the country they were less so.

(c) A part of my earnings was dedicated to an Italian class which I attended twice a week, and thereby or in which rapidly acquired some proficiency.

(d) He had caught it up, and throwing down the nail threatened to cut her throat.

(e) I ordered out two boats, and with Mr. Banks and Dr. Solander, and the other gentlemen, our two Indian friends, we embarked for our expedition.

Wesleyan A. V. Institution, Royapettah.

## MATRICULATION CLASS.

### ENGLISH PROSE.

I. Explain:—*'Topical remedies,' 'Regular physicians,' 'Empirico,' 'A gentleman in every feeling,' 'the Augustan age of Queen Anne.'*

II. Derive:—*Delirious, lunatic, comic, soldier, period, tragic, infant, clergyman.*

III. Explain with reference to the context.

(a) "One may as well speak in the mouth of a cannon as where that child is."

(b) "I rode home to my nucle's musing what there could be in the spirit of authorship that could inspire its votaries with the courage of martyrs."

IV. Explain:—*'Digression,' 'Periphrasis,' 'Tautology,' 'Metaphor,' 'Metonymy.'* Quote examples from your text.

V. Point out any thing faulty in

(a) "Remember of detecting the name of Cumberland."

(b) "I begged him to spare this fatigue."

VI. Write what you know of Walter Scott as an attorney.

VII. Who were Washington, the Jacobites, Ramsay, Josephus and the Knight of La Mancha?

VIII. Our voyage was performed in *the Duchess of Buccleuch*, Captain Beatson, Master.

What do you understand by the italicised words?

Parse Beatson and Master.

Presidency College.

## MATRICULATION CLASS.

### PHYSICS AND PHYSICAL GEOGRAPHY.

I. A cubic foot of water weighs 62½ lbs. What is the weight of the same volume of Iron (Sp. Gr. 7.78), of Cork (Sp. Gr. 0.24), and of Sea-water (Sp. Gr. 1.026)? Compare also the densities of these bodies with Sea-water.

II. Will a solid substance lose more weight by being weighed in hot or in cold water? What must be the temperature of water in which a body loses most weight?

III. Apply the same principle to a weighing conducted in air. A piece of Iron weighing 50 grains is counterbalanced by a piece of Cork. Will the weight of the Cork be greater or less than that of the Iron, and how much?

IV. The difference of time between Greenwich and Masulipatam is 5 hrs. 24m. 16s.; what is the longitude of the latter place.

V. What is meant by the Vernal and Autumnal Equinox, the Summer and Winter Solstice, the Northern and Southern Tropic, and the Equator? What is the position of the Sun in London at noon on the first four occasions. (Latitude of London  $52^{\circ}$  N.)

VI. What is meant by the Monsoons, and what name do they bear in the Atlantic Ocean? Explain why these winds bring rain, and why the N. E. Monsoon should bring more rain to Madras than the S. W.?

### DOVETON COLLEGE REPORT FOR 1877-78.

At this, the Twenty-third Annual Meeting of the Members of the Doveton Protestant College, your Committee have the honour to lay before you their Report on the progress of the Institution during the past year.

#### College and Boys' School.

The numbers on the Roll when the Institution was closed, on the 14th December, were as follows:—

|                    |     |    |     |
|--------------------|-----|----|-----|
| Senior B. A. Class | ... | 4  |     |
| Junior B. A. "     | ... | 2  |     |
| Senior F. A. "     | ... | 5  | 20  |
| Junior F. A. "     | ... | 9  |     |
| Upper School       | ... | 54 | 108 |
| Lower "            | ... | 54 |     |

Total... 126

It is with regret that your Committee point out that the downward tendency which was complained of in the previous Report, has not experienced a check during the course of the past year, the decrease of numbers being 31 for 1877 as against a decrease of 30 for 1876. It should, however, be borne in mind that the Institution has had to contend with exceptionally unfavourable circumstances during the past year. The severe famine that prevailed throughout its course must have very considerably increased the cost of living. It could hardly have been expected that this circumstance would fail to affect prejudicially the school attendance among a community the majority of whose members find it difficult enough, even in ordinary times, to defray the cost of their children's education. And doubtless the Doveton is not the only Institution that has suffered in the same way from the same cause. But be that as it may, your Committee would venture to express the hope that this retrograde process may speedily be arrested, and even reversed, and that the year on which we have entered may be the starting point in a career of widening usefulness.

Several changes have taken place in the teaching staff of the Institution during the past year, one of them being of very great importance. In the month of May last a letter was received from Mr. Thom, who was then at home on furlough, intimating his intention not to return to Madras, and tendering his resignation of the office of Principal. Your Committee, after having endeavoured without success to induce Mr. Thom to withdraw his resignation, communicated with the Rev. W. Miller and the Rev. B. Sell, who fortunately happened to be in England at the time, soliciting their aid in procuring a competent successor to Mr. Thom, and authorizing

them to take the necessary steps for that object. These gentlemen cordially accepted the onerous duty, and prosecuted the matter with such energy, that, in about three months after, a communication was received from Mr. Miller, intimating that Mr. John Cook, M.A., a graduate of the University of Aberdeen, and for some years Assistant to the Professor of Natural Philosophy in that University, had been engaged as Principal. On the 4th of November thereafter Mr. Cook arrived in Madras, and at once entered on the discharge of his duties. Your Committee have received the most satisfactory testimonials as to the character, scholarship and educational experience of the new Principal, and they feel confident that you will unite with them in the expression of their warmest thanks to the Rev. Messrs. Miller and Sell for the very great trouble they have taken in bringing this matter to a speedy and satisfactory termination.

From the time that Mr. Thom left on furlough in the beginning of July 1876, until the date of Mr. Cook's arrival in Madras, the charge of the Institution was entrusted to Mr. Binion, the Head Master; and the thanks of your Committee are due to him for the satisfactory way in which he discharged the duties of Acting Principal.

Mr. Shuttie, Master of the Fifth Class, resigned on the 1st of December last, and his place has been filled up by Mr. R. Thompson, B.A., of the Madras University, who has had a very considerable amount of experience in teaching. Mr. Wilson, Master of the Third Class, has intimated his intention of resigning at the end of this month, his object being to join the College as a student.

In the early part of the year, the Institution was visited by Mr. Fowler, the Government Inspector, who examined all the classes below the Matriculation in the various branches of secular study. From the Report of that inspection, which was given as an Appendix to last year's Report, it appears that the Inspector was not by any means satisfied with the progress of the pupils. In forwarding Mr. Fowler's Report, the Director of Public Instruction asked what steps the managers of the Institution intended taking in order to improve the quality of the instruction imparted in it. Your Committee replied to the Director by a letter, the gist of which is contained in the following extract:—

"The Committee have already made an important arrangement, which they anticipate will do much to secure the object desiderated. When Mr. Thom took leave on furlough in the beginning of July last year, the Committee appointed a native graduate to teach Mathematics in the College department. When the question of doing something to secure a more adequate supervision of the classes in the school department was brought up a few months after, the Committee resolved that the graduate above referred to should be permanently retained on the College staff, so that the Principal might be set free for some time every day for the work of supervising the lower classes. The Committee believe that the want of such supervision, necessitated as it has hitherto been by the fact that the Principal has had to give almost his whole time to the work of teaching in the College, is in a great measure to blame for the state of matters animadverted on in Mr. Fowler's Report; and they trust that the arrangement they have made will speedily result in an improvement in the quality of the instruction imparted in the Institution."

Your Committee are aware that a good deal has been said theoretically about the inexpediency of setting natives to conduct classes of Europeans and Eurasians; and the arrangement they have made, viz., the entertaining of a native graduate on the College staff, has had too short a trial to enable them to pronounce a final decision on its advisability. In these circumstances they have recommended that, after the new Principal shall have had time to acquire a sufficient experience of the working of the classes, he should be invited to express an opinion on this, and on the other

existing arrangements for carrying on the work of tuition in the Institution.

In the last Report it was stated that eleven candidates went in to the Matriculation, and nine to the F. A. Examinations in December 1876, and that four were to appear at the B. A. Examination in February 1877. The results of these examinations, in so far as the Doveton was concerned, were announced by the Acting Principal in his Report read at the Annual Distribution of Prizes in March last. In that Report it is stated that eight passed the Matriculation Examination, two the F. A., while in the B. A. Examination all four failed. In view of these results, your Committee called for a Report from the Acting Principal on the causes of the failure on the part of the Doveton in the University Examinations, and appointed a Sub-Committee to receive and consider it. The chief causes of failure alleged by Mr. Birdon in that Report were—(1) the want of industry on the part of the boys, (2) irregularity of attendance, and (3) the inefficiency of the teaching staff. The Sub-Committee did not quite endorse the first and third of the reasons put forward by the Acting Principal, seeing that with the same teaching staff, and the same class of pupils, the Doveton had done well in the University examinations, in previous years. They were disposed to look rather to a more adequate supervision of the lower classes, care on the part of the Professors and Masters to adapt their teaching to the wants of the pupils, and the enforcement of greater regularity of attendance, as the best safeguards against failure in the future.

The Principal reports that eleven candidates have gone in, on recommendation, and three on their own responsibility, to the Matriculation Examination, six to the F. A., and that he expects to send up four to the B. A. Examination in February next.

Six boys went in to the Peter Cator examination in Scripture knowledge (Lower Grade), and of these one took a prize, and four gained certificates.

All the classes were examined at the close of the session in Scripture knowledge, by outsiders, and all the classes below the Matriculation, in secular subjects, by the officers of the Institution. From the Reports of these examinations, which will be given as an Appendix to this Report, it will be seen that some of the lower classes in the school did well both in Scripture and secular subjects, and that the higher classes did only fairly well in either. Of the College and the Matriculation Classes the only Report that has yet reached us is that from the Rev. Mr. Scott, who examined the Senior F. A. Class in Scripture. His Report is satisfactory.

#### *The Boarding Establishment.*

On Mr. Thom's departure on furlough in July 1876, Mr. Bower took charge of the Boarding Establishment. This arrangement continued until July 1877, when Mr. Bower, for domestic reasons, resigned charge. The number of boarders had by that time been very much reduced, and your Committee thought it most expedient to close the establishment until the arrival of Mr. Thom's successor. Mr. Cook has now taken charge of it, and your Committee hope that this important branch of the Institution will speedily be in the flourishing condition as it has been in for many years.

#### *Girls' School.*

Your Committee have to record a decrease of numbers in the Girls' School as well as in the Boys'. The number on the Roll at the close of the year was 89, as against 123 at the close of the previous year.

In last Report it was stated that Miss Keely's health would probably necessitate a change to England in the course of the year, and in the month of June last she took leave on furlough for fifteen months. Prior to her departure your Committee, in consideration of the highly exemplary manner in which Miss Keely had discharged the duties of Head Mistress for a period of ten years; unanimously voted her a gratuity of Rupees 500,

and they feel quite sure that you will approve their action in this matter. On Miss Keely's recommendation Miss Norton was appointed to take charge of the school during the absence of the Head Mistress.

Miss Take resigned her post of Pupil Teacher at the end of December last, and her place has been filled up by Miss A. Stages, for five years a pupil in the school, and strongly recommended by Miss Norton.

In the early part of the year the school was examined by Mr. Fowler, whose Report, which is printed as an Appendix to the Committee's Report for last year, was not a very favourable one. Towards the end of the year the school was again examined, this time by Mr. G. Duncan, the Acting Government Inspector. His Report was, on the whole, favourable. It will appear as an Appendix to the present Report.

Thirteen girls went in to the Teachers' Grade Examination, six for the Second Grade, and seven for the Third. Of these nine have passed, three in the Second Grade, and six in the Third.

The same number of girls presented themselves at the Peter Cator examination (Lower Grade), and of these two carried off prizes, and eleven gained certificates. These results show that the important subject of Scripture knowledge has been well attended to.

At the close of the session the various classes were examined by ladies and gentlemen unconnected with the school. The Reports of these examinations have not yet been all forwarded, but such of them as have reached us are satisfactory. They will be printed as an Appendix to this Report.

In the beginning of June last, your Committee sustained the loss through death of one of their number who had always taken a very active part in the management of the Institution. At their next monthly meeting, thereafter your Committee expressed their sense of the loss they had sustained in the Resolution, a copy of which is given in the margin.

#### *THE PRINCIPAL'S REPORT.*

As I have been in charge of this institution for but a fraction of the year to which the Prizes and Honors awarded to-day in reality belong, it cannot be expected that I should give the customary commentary on the various changes in the School and College that have taken place during the Session. These are sufficiently detailed by our worthy Secretary in his report already laid before the Committee of the Institution.

The annual examinations of the School classes followed so shortly after my arrival here, that I had not either the time or the acquaintance of gentlemen outside of the Institution, to obtain external assistance in the conduct of these examinations, except indeed as regards Scriptural knowledge. The teaching of this subject was tested by the Rev. Mr. Hard and the Rev. Mr. Joss, to whom our thanks are due for their kind assistance. The Scripture knowledge of classes I, III, and V was examined by the Rev. Mr. Hard; he expressed himself very fairly pleased with the results, especially in class V, as to which he writes: "It was a pleasure to conduct this oral review." The Scripture knowledge of classes II, IV, and VI was tested by the Rev. Mr. Joss, who characterised the answering of class II. as fair, that of class IV. as rather unsatisfactory, that of class VI. as by no means up to his expectations, and all as exhibiting very defective knowledge of Sacred Geography. In secular subjects the examinations of classes I—VI. had to be conducted by my colleagues, Mr. Bindon, Mr. Bower,

Mr. Janakeerammiah, Mr. Cooney and by myself. The reports on the various classes I cannot here give in detail. These will appear in the Appendix to the printed report of the Institution for the year.

Mr. Cooney's report on class I. brings out results which are tolerably satisfactory; he adds that the failures were chiefly those who joined the class during the latter half of the year. Mr. Janakeerammiah reports in laudatory terms of the exhibition made by class II. Mr. Bower reports class III. as having done on the whole very satisfactorily, the average marks gained not falling below 50 per cent. in any subject. Mr. Bindon examined class IV. in Latin, English, Geography and History, and reports not very satisfactory results. Their Arithmetic, Algebra and Euclid were tested by myself, but I could not call their performance very creditable. Class V. was examined by me and found weak in the matter of English grammatical analysis, and in Arithmetic; and the knowledge of Latin was also meagre and inaccurate. Class VI. was examined by Mr. Bindon in Latin; his report is on the whole favourable. It was examined by Mr. Bower in English, History and Geography; and in these subjects the pupils did tolerably well; it was examined in Mathematical subjects by myself, but I was disappointed with the results in Algebra specially. I may add that class VI. was examined by printed papers, the other classes orally. While thanking my colleagues for their kind co-operation, I may be allowed to remark that there can be little doubt that such examinations would be more satisfactory to all concerned if they were conducted by teachers or other competent gentlemen external to the Institution: at the close of the present year I shall arrange for this, if possible. For the Special Examinations of our Matriculation and College classes, I have to report simply the results of the University Examinations in the secular subjects, and of the Examinations of the Rev. Mr. Scott and the Rev. Mr. Hard in Scriptural knowledge. The reports of the latter two gentlemen are on the whole fairly satisfactory.

The same can scarcely be said of the University results. Class VII. sent up 14 to the Matriculation examination, though only 11 of these were recommended to go on. Of these 7 passed. We sent up to the First in Arts Examination six students; but of these only one passed, I am sorry to say. For the B. A. examination we sent up four students; of these one passed. This, though far from satisfactory, is at all events better than last year, when none passed. We must not be discouraged, but simply made more determined that this ignominious treatment of the Dorseton College shall not be allowed to go on. I must, however, confess that I felt slightly discouraged last week at the University Convocation, when I saw such a miserable representation of Anglo-Indian Educational energy, and such an overwhelming array of tormented B. A.'s. The result of our solitary pass in the First in Arts Examination is that our Junior B. A. Class consists of only one student. Our senior B. A. consists of two students. This does not offer much encouragement to the higher aims of our College for the next couple of years. We must, however, do our utmost to encourage the junior classes, from which the upper are recruited. On this account I have been devoting a good deal of attention to the school department of the Institution. After my arrival here in November I spent a considerable amount of time and trouble in examining the curriculum and style of teaching of the various classes, with a view to making such suggestions and changes as I should consider to be advisable. I think it but fair to myself to mention some of the changes I have had to make. First of all I found an excessive irregularity of attendance at school. This is partly attributable, of course, to the accidents of the climate; but there were very many absences not so explicable. We must insist then, both to pupils and to parents, on the utmost regularity as at the basis of successful work in teaching; and we must insist on carrying out the rule that

absences be invariably accounted for by written notes from parents or guardians. I would strongly urge on parents to allow no other cause than sickness to interrupt their children's attendance at classes. Here I would offer a word of advice to our College students. It is in my opinion a mistake to imagine that they require a fortnight's leave from classes to prepare for the University Examinations. Surely their teachers ought to be of very great service to them in the final revision of class-work for those tests; it is mere conceit to imagine anything else; and the results this year at all events lend some support to my statement. A couple of days is all I mean to give in future, as I am convinced that moping at home for a fortnight or more is only injurious to the head and health.

Monthly Examinations by written papers have been instituted in the four highest classes of the school as well as in the College classes. The results of these are to form the chief factor in the determining of the Prize List. Such monthly examinations are now held in all good English and Scotch Schools, especially in such as are working up to written examination tests. And indeed, even lower grade schools at home now work up to such tests; for H. M.'s Inspectors examine almost the very lowest standards by writing. Monthly papers are set by the Masters on the work done during the past month; and single papers are set by himself in the different classes with the aim of getting a personal acquaintance with the merits and defects of individual pupils. Special and more difficult papers are to be set twice a year before the Midsummer and before the Christmas holidays.

In English I have prescribed more frequent exercises in dictation, especially in the lower classes, and as far as time would allow in the upper: for I found that even in the highest classes there were boys whose power of spelling correctly exhibited itself only by accident. Increased attention to grammatical analysis is also given in the different classes; and after the holidays I mean to prescribe *Home Essays* at stated intervals on suitable subjects. These have a valuable educative power for English composition.

To Writing I have allowed more time, and I have caused it to be continued for two years longer than formerly. The bad writing of many of the candidates at University Examinations must damage them seriously with Examiners, whose mark-assigning machinery is not metallic, and consequently can be thrown out of gear even by such a small thing as bad writing.

In Arithmetic I have prescribed text books, that each pupil may have more practice than he could otherwise have. The Arithmetical standard of the whole school I found to be exceedingly low, and the power of working out sums surprisingly slow.

In Latin I have insisted on greater care and strictness, with more attention to the construing of English into Latin. This, in my view, is the best and only test of real knowledge of the language, just as it is in French, or German, or Tamil, or any foreign language. Some, I know, regard the construing of English into Latin as a mere waste of time, a sort of remnant of the mediæval dominion of use only to preceptors and priests. This may be true—but it smacks of a slight suspicion that the most ready dogmatists on this point are very frequently those whose ignorance of the subject is specially excused by the assertion. But apart from its value for University Examinations, a knowledge of Latin Syntax—which is all that Latin composition really involves—is invaluable to the English student from the aid it gives to the understanding of the genius of our own language. I say nothing of the great languages of Spain, Italy, and France, of which Latin is the direct parent. I have to insist on the value of Latin directly and indirectly in our teaching, because every University failure among our students this year has been in Latin amongst other subjects—at all events in the Matriculation and First in Arts Examinations. We must therefore gird



up our loins and set to work vigorously to repair the breaches in the educational fame of the Dorseton which such failures produce.

Lastly, I wish to say a word on behalf of the teaching of Science in our Institution. This is not antagonistic to the teaching of Classics, as is sometimes asserted, but should be regarded rather as complementary to it. Let me say then that, while I would have English and Classics more carefully taught, I am convinced that science teaching should be more encouraged amongst us. This year I have introduced class VI, the pre-matriculation class, to the primer on *Physics*, so that they may not come as perfect strangers to the subject next year. It is well-known that no paper is less satisfactorily answered at the University Examinations than the *Physics* paper. The causes of this are, in my opinion, three:—(1) The value assigned to the subject by the Syndicate is too insignificant and out of all proportion to its comparative value, either as an educative exercise, or for its practical utility. It should have double the value with some more perfect text-book than the one now prescribed, which I used to teach to boys three or four years younger than our average matriculating student. (2) It is got up generally by mere cram, and in no subject will cram 'pay' worse than here. (3) The teachers as a rule have not the means of illustrating the subject practically, and a non-experimental teaching of it is almost valueless either for examination or for practical utility. To the third of these causes I wish to call attention, and to state that we are miserably deficient in illustrative apparatus, compared with any good English or Scotch School of the same standing as we desire the Dorseton to be. Could the needed funds be raised—and it would not require more than Rs. 1,000—I should wish a fairly complete set of chemical and physical apparatus; and I should introduce the chemistry primer as part of the ordinary curriculum of class V: it would be of much service for the understanding of the physics primer as well as for the Physiology class, to which the students now come in total ignorance as to the simplest chemical facts. I am convinced that, could we raise such a sum of money it would not vanish in smoke.

Before closing my remarks I may add that I have laid before your Committee a scheme for the re-division of the Teaching Labour, whereby we should have masters of subjects instead of masters of classes as at present. By such a scheme the salaries of most of our teachers would be increased, and consequently their inducement greater to stay longer with us than is customary at present, and the evil effects of frequent changes of masters would in consequence be obviated. Of this I have had some experience during even the short time I have been in charge. Such a system usually obtains in English and Scotch middle and higher class schools. I trust the Committee may see their way to its adoption: though it may perhaps occasion some ill-feeling, it is from a conviction that it would benefit our Institution that I propose it.

In conclusion I must offer our best thanks to the Honorable gentleman who has so kindly consented to preside here to-day: and to the Hon. J. G. Coleman for his continued gift of a gold medal to the College Department. I must add that my own personal thanks are due to the Committee for their cordial co-operation with me, to my colleagues for their uniform compliance with my suggestions, and to the boys and students of the Institution for their gentlemanly behaviour towards myself and general good conduct since I have come amongst them.

#### THE CHAIRMAN'S ADDRESS.

This is the hour, when—as a spectator—I begin to enjoy myself on festive occasions like the present. The heavy business is over, and the spectator has nothing to do but to await with curiosity and commiseration the speech,

as the mild attempt is called, of the elderly gentleman in the chair, who, with or without a husky voice, involves himself in a series of disjointed sentences, in praise of the objects of the meeting.

England, however, expects every man to do his best, and if I must preside sometimes, let it be, as often as not, at the anniversary of Institutions, whose objects are so benevolent and results so useful as those of the Dorseton College and School.

It has been a subject of wonder to me what the East Indian community did before it had the opportunity of educating its younger members in this and other cognate institutions which now happily exist, and for very many years have existed in this city. I once put the question to a very old man, "How were you brought up in those days?" "Well," said he, "we were not brought up at all, we were dragged up, anywhere and anyhow," and he went on to draw a pitiful picture, which I will not shock you by reproducing here, of the miserable way in which East Indian boys of all but the more affluent classes were committed to the hands of brutish and ignorant teachers. The change is the same as the change that came over England after Edward VIth's Grammar School, or over Scotland after the establishment of the Parochial Schools, nearly two centuries ago. You may remember Macanlay's description of the change that was effected in the ancient indolent and predatory habits of the Scottish nation, an improvement such as the world had never seen in the moral and intellectual character of a people. Thoreafter, wherever a Scotchman went, he carried his superiority with him—in a public office, he worked his way to the top: in a factory he became the foreman: in trade, his shop was the best in the street: in a colony, he was the most thriving planter. To these illustrations might be added the success of Scotchmen in India. Many names will occur to you, enough to mention one, the late Joseph Hume. His origin was of the humblest, but he lived to represent in Parliament the town of Montrose, at whose public school he had been a diligent student, and in the market of which his mother used to sell her slender stock of stockery.

Now all this was owing to a cheap and good schooling. It would of course be absurd to suppose that every one of you boys will rise to the top of the tree. Many of you, I promise myself, will do so; but even in those cases where it will be otherwise, with those of mediocre abilities, or who, owing to various circumstances, leave school early and are apprentices to tradesmen or even taken a lower social place—depend upon it that habits of application and discipline you have gained here and the love of letters you take away with you will do you "Yeoman's service" in after life. Love your old school: be grateful for the training it has given you: help it if you grow rich, and let it always be said of you "We can trust him—he is an old Dorseton boy."

#### HOMER AND HIS TRANSLATORS.

SOME people believe in twenty Homers—we in one. Nature is not so prodigal of her great poets. Heaven only knows the number of her own stars—no astronomer may ever count them—but the soul-stars of earth are but few; and with this Peryan pen could we name them all. Who ever heard of two Miltons—of two Shakespeares? That there should even have been one of each, is a mystery, when we look at what are called men. Who, then, after considering that argument, will believe that Greece of old was glorified by a numerous brotherhood of coeval geniuses of mortal birth, all building up the lofty rhyme, till beneath their harmonious hands, arose, in its perfect proportions, immortal in its beauty and magnificence, "The tale of Troy Divine?"

Was Homer savage or civilized? Both. He was Achilles. Conceived by a goddess, and begotten by a hero, that half-eccestral child sat at the knees of a formidable Gmaliel—Chiron the Centaur. Grown up to perfect stature, his was the Beauty of the Passions—Apollo's self, in his loveliness, not a more majestic minister of death. Paint him in two words—STORMY SENSITIVE.

Was the breath of life ever in that, shining savage or was he but a lustrous shadow in blind Homer's imaginations? What matters it? All is that we think; no other existence; Homer thought Achilles; clouds are transient, but Troy's towers are eternal. Oh! call not Greek a dead language, if you have a soul to be saved! The hard who created, and the heroes who fought in the Iliad, are therein not entombed, but enshrined; and their spirits will continue to breath and burn there, till the stars are cast from the firmament, and there is an end to what we here call Life.

Homer, you know, wrote in Greek, and in many dialects. He has been translated into English, which in heroic measures, you know, admits but of one. All translation of the highest poetry, we hold, must be such is the mysterious incarnation of thought and feeling in language, at best but a majestic mockery. Something ghostlike; when supposed most substantial, suddenly seeming most a shadow—or change that image, why, then, like a broken rainbow, or say rather, like a rainbow refracted, as well as reflected, from the sky-gazing sea! Glorious pieces of colour are lying here and there, reminding us of what, a moment before, we beheld in a perfect arch on heaven.

But while the nations of the earth all speak in different tongues—they all feel with one heart, and they all think with one brain. Therefore, he who hath the gift of tongues, may, from an alien language, transmute much of the meaning that inspires it into his own; although still we must always be inclined to say, listening to the "repeated strain,"

"Allice, but oh! how different."

All truly great or good poets desire that all mankind should, as far as it is possible, enjoy all that in the human is most divine; and therefore while each has

"Like Prometheus stolen the fire from heaven,"

they have all exultingly availed themselves of the common privilege of stealing—whenever inspired so to do—and plagiarism is thus often the sign of a noble idolatry—of stealing from one another, that after hoarding them up in the sunny and windy air-lofts of their own imaginations, they may in times of dearth—or to make plenty more plentiful—diffuse and scatter those life-enriching thefts—in furtherance of the desires of the dead—

"O'er lands and seas,

Whatever elume the sea's bright circle warms!"

And thus, too, have the truly great and good poets sometimes—often—felt that it was dignified to become translators. What else—ay, ay, much else—was the divine Virgil? Fools disparage him, for that he translated—stole from Homer. As well despise Shakespeare because he stole, not only from unwritten nature and her oral traditions, but from all the old Homeric war chronicles people had got printed, that he could lay hands on;

"For the thief of all thieves was the Warwickshire thief!"

Indeed, Shakspeare, who had "little Latin, and no Greek," contrived—heaven only knows how—to translate into English thousands of fine things from those languages. Marlowe was an avowed and regular translator—so was Ben Jonson—and many others of that wonder-working age.—Wilson.

### THE DASA KUMARA CHARITAM.

(Compiled from various sources.)

THE exact date of the composition of the Dasakumara charitam in Sanskrit is not known. It is supposed to have been written about the end of the eleventh century, and was left unfinished by the author; but as the story of the last narrator is almost finished, not much could have been wanting to complete the work, and the reader may easily imagine what the conclusion would have been. Some of the incidents correspond with those of the "Arabian Nights," but the stories on the whole are quite different from anything found there, and give a lively picture of Hindoo manners and morals. Unscrupulous deception, ready invention, extreme credulity and superstition, and disregard of human life, are strongly illustrated. The belief in the power of penance, which was supposed to confer on the person practising it not merely personal sanctity, but even great supernatural powers, was very generally entertained among the Hindoos, and is often alluded to here; as is also transmigration, or the birth of the soul after death in a new body, human or brute.

Sufferings or misfortunes are attributed to sins committed in a former existence, and in more than one story two persons are supposed to recollect having many years before lived together as husband and wife. Much use also is made of the agency of supernatural beings; for besides numerous gods, the Hindoos believe, or at least believed, in the existence of innumerable beings, in some degree immortal, but liable to be killed even by men, swarming in the air, generally invisible, but sometimes assuming a human or a more terrible form; occasionally beneficent, but more commonly injurious to human beings.

A continuous and standard prose composition was wanting in Sanskrit literature but the want was supplied by the *Dasa Kumara Charita*, written in a highly cultivated style but entirely in prose. Tradition affirms the contemporary existence of Sri Dandi the author of this work, and Bhoja Deva, Raja of Dhar, the celebrated patron of men of letters at the end of the tenth century. The *Dasa Kumara Charita* describes both the political and social condition of India at a period anterior to the Mahomedan conquest, no mention being made of the Mahomedans except of merchants or navigators. The delineation of manners throughout the book is unmixedly Hindu. The last of the stories relates to a prince who is said to be a member of the race of Bhoja (the Bhoja *Famam*). This would imply that Dandi lived after the reign of Bhoja but for the admission that the work was left unfinished by the author and that the last story was written by another. At all events the work cannot be later than the twelfth century.

A work on Alankara or Rhetoric is also attributed to Dandi. Dandi properly designates a "staff bearer" but is commonly applied to a sect of religious mendicants, who are so termed because they

carry a slender *dand* or wand. The *Sesha* or Supplement to the *charita* is the composition of Chakrapani Diskshita, a Maharratta Brahmin. There is also a commentary on the text of the *Dasa Kumara* by Siva Rama Tiwari, a Brahmin of Benares.

The subjects of the stories of the *Dasa Kumara* are those taken from domestic life, and are interesting as pictures of Hindu society for centuries probably anterior to the Mahomedan conquest. The portrait is not flattering: profligacy and superstition seem to be the characteristic features, loose principles and lax morals together with implicit faith in the power of occult rites and magical incantations. The picture does not want some redeeming traits, and the heroes are described as endowed with enterprise and hardihood, with inviolable devotedness to their friends and kindred, and with tender and constant attachment to the objects of their affection. This work may be considered of historical value inasmuch as it defines the political divisions of the country before the Mahomedan invasion. From the particulars of the education of the prince and his nine companions, we may gather a curious detail of what were considered, no doubt, essentially princely acquirements. The use of various tongues, skill in arms, and the management of horses and elephants, acquaintance with tradition, with the rules of polity, with rhetoric and logic, and with music are qualifications sufficiently appropriate, but we should scarcely have expected to find the list extended to astrology, medicine, magic, to proficiency in games of skill or chance, and dexterity in thieving! Another of the accomplishments of princely education, strange to tell, is house-breaking, which any one who reads the story, may see perpetrated by Apararavarma in the Second Book!

Interesting as the Tale may be to the adult student of history and of social manners, it appears to be very unfit for the perusal of youth. The former part of the work is certainly far less objectionable than the latter, but everywhere the principle is inculcated that the end justifies the means, and the sympathies of the readers are sought for those who to gain an object perhaps lawful in itself, make use of the basest falsehoods, and descend to the meanest and most wicked of stratagems.

### EXAMINATIONS.

SOME studies merely furnish the student with knowledge; others endow him, further, with a new faculty. The study of history or of a literature, for instance, should result in an intelligent grasp of facts, in culture of thought or tastes; the study of a language should result, further, in the power of translating from it, of writing and speaking it; the study of mathematics should result in the power of solving problems. Subjects of the latter class, which confer not merely information but the power of doing something—'Arts,' in the old phrase of the schools, as distinguished from 'Sciences'—have two signal advantages for purposes of examination, whether the examination aims at testing general ability or special knowledge. First, they are subjects in which memory cannot effectually simulate the fruit of other mental functions; they are subjects which cannot be successfully 'crammed.' The memory which they bring into play is neither the mere 'carrying' memory, which delivers its

parcel exactly as it received it, nor even the analysing memory, which has its own independent and intelligent control of details, but that assimilative memory which holds knowledge as a part of its possessor's mental being. Such assimilation is necessarily gradual. If a man can write a foreign language with elegance and precision, it may safely be taken as a proof that his acquaintance with it began more than three weeks ago. Secondly, in these studies which confer a faculty, there is for most men what Mr. Latham calls a 'terminal excellence'—i.e., a limit of proficiency beyond which no amount of work will enable them to advance. The progress of a student in mathematics will often be stopped, and stopped finally, by sheer want of power to form certain mathematical conceptions. Felicity in writing or speaking a foreign language will often cease to grow long before the student has attained his knowledge of its facts. Where an examination reveals such a limit, it does more than gauge the candidate's special attainment—it throws some light on his general calibre. Thus, both as testing thoroughness of knowledge and as giving a clue to the candidate's mental power, subjects of the 'Arts' class have a distinct advantage. In the case of modern languages, however, this advantage is liable to a serious drawback. The experience of schools and universities has shown that to give prizes and scholarships for modern languages is, in too many cases, to reward a young man for being of foreign extraction, for having resided abroad, or perhaps for having passed the years of childhood in a polyglot nursery. Something may be done towards correcting the influence of such accidents by taking care that the papers shall test, not merely fluency, but also literary and grammatical knowledge. This will reveal those cases in which the language is possessed merely as it is possessed by an uncultivated native. But the candidate whose familiarity with the language happens to be more or less like that of a moderately-cultivated native must always have an overwhelming superiority over one whose acquaintance with it is derived chiefly or solely from books. . . . The great difficulty in the way of using school examinations for the purpose of selection consists, of course, in the want of uniformity in the methods and standards of different schools. Such freedom and diversity of education are thoroughly English, and, whether of unmixed good or not, are, at least, not likely to be soon exchanged for a uniformity based on either of the two chief continental types. The mechanical rigour of the French system, under which the Government examinations strictly control the course in the lycées, is not an encouraging model; nor have Englishmen any reason to desire that if they should ever possess a Minister of Education, that official should be able, by consulting his watch, to say exactly what every boy in the country is construing at a given moment. In Germany the State Education works harmoniously with the State examinations, and, what is much to be commended, the examinations do not cramp the independence of the teaching. A German schoolmaster, too, it should be remembered, has an invaluable instrument of pressure at his command. A boy must, before a certain age, have attained to the highest form at one in the school, and must have remained in it, conducting himself satisfactorily for a year, if he wishes to have his period of compulsory military service commuted from three years to one. But the German system, with all its merits, is a system from which we can only take hints; it is

not one which we could transplant. English public feeling would not tolerate the state taking education so much into its own hands.

Much has been said or written, and something has been done of late, with a view to organizing a profession of teaching. If teaching is to be regarded as a science with principles, or, at least, as an art with rules of its own, the same claim may certainly be made for its correlative, or rather its instrument, examination; and Mr. Latham has deserved well of education by inquiring systematically how this instrument may best be used. His chapter on "marking and classing," and many remarks strewn up and down the book, form a manual of practical wisdom for the examiner. Teachers and candidates have frequently good reason to appreciate the difference between an examiner who knows and one who does not know his business—between one who is desirous and able to elicit general knowledge and one who has the ambition of displaying pedantry, or the more modest aim of disguising incompetence. But it is well that the general public also should realize the nature and the extent of the mischief which may be done to public interests by intrusting the task of an expert to unskilful hands."—*The London Times*.

#### SIR WILLIAM ROBINSON ON MISSION SCHOOLS.

*The following speech was made by Sir William Robinson on distributing the prizes to the pupils of the Madras Christian College:—*

"The Report on the working of the Free Kirk School and Madras Christian College during the past year, commands our respect and sympathy.

The youths before us have felt the famine. Some have suffered, and those from the wealthiest homes have watched changes amongst their companions and have known the reason why, for a year of untold misery and death to the poor, feeble and helpless, has touched every grade of society. Our dearth is now passing away. Slowly and unevenly; it is true, yet halting nature is reviving; and I hope that you, who shall gather here next year to hear the story of similar educational successes, will listen to it, unsaddened by the thought that the bright ones before you have again had cause to remember that their homes were straitened and that famine was abroad in the land.

I have listened to the Report, as I have said, with respect and pleasure because it is on the whole a happy and successful one. We have still a steady increase of an already abundant attendance; and that increase is most marked on the Christian College side. The students gained a fair share of the prizes associated with the name of Peter Cator—a name I always hear with respectful esteem; and the officiating principal tells us with regard to the christian teaching that "in each class in the school one hour a day—and this generally the first hour or at any rate a morning hour—is devoted to the reading and study of the Bible." The name christian is not misapplied where things are so; and, naturally, Christian Societies of more than one denomination can sympathise with each other around this simple and catholic basis.

The extract read to us from the official Director's report, leaves nothing to be desired in regard to the intellectual training of the pupils.

Of the financial prospects of the institution, I should be fain to say that they also are nearly all that could be desired, did I not know that financiers are not easily satisfied; and I will only add that I heartily wish for our Finance Committee of this Institution all that they desire; for I know all that they get is well employed.

And now I will remind you that I have myself often seen that singular embodiment of christian life, zeal and faithfulness, the late Rev. Mr. Anderson, labouring some 35 years ago amongst 200 or 300 children, with a staff of teachers poor perhaps in their *matériel* but bright from his example. When I have told you this fact, and now point around to a Union Christian College and Central School, training upwards of 1,000 intelligent youths and young men from the most respectable classes, I have told you what it is that tells me that the blessing of our God is with what we are looking on here: tells me that this beneficent Institution has been, and still is meeting a real intellectual and moral want which certainly exists, and tells me that its christian and intellectual work is accepted and has been done in a manner that provides certainty as respects the future.

We all miss the valued principal of this Institution, the Rev. W. Miller this day, and shall welcome him back in renewed health and continued disinterested devotion to the work of his life. But his cloak has descended on a second in command that has not failed his chief nor the objects of their joint work. And results tell us how the College and School staff must have worked through the year. Our congratulations and our thanks are therefore alike due to the Rev. Mr. Rae, the officiating principal, and all the worthy staff of his co-adjutors.

I am heartily glad to find the principals of some of our chief Collegiate Institutions taking pains to follow their distinguished *alumni* into their working life, in order that the light of fact may dispel misgivings as to the real effect of higher education on the society of this country. Mr. Porter followed up last year the foot-prints of a number of those whom he had himself set on the road to usefulness and honour, with precisely the same results as Mr. Rae's researches had elicited. My young friends, neither the schoolmaster, nor the christian teacher is one whip too far a-field for your country's growing demand for moral and cultured labour. Those who have gone before you have been raising the whole character of this demand on the powers intellects and integrity of the country. You yourselves are on the road to independence and honour, if you shall merit them. And your future successful career will but prepare the way for the many more who must assuredly follow in the course of academic distinction. As I have said elsewhere, the most reproductive million sterling which the State has ever spent is that million sterling which the higher education has cost during the last quarter of a century. The moral and intellectual returns for that investment are untold.

And now I wish to say a few words on the distinctive assertion of character which the College Department of this Institution has more recently put forth: for practically this Institution has ever been christian in its life and being throughout its every branch, and missionary in its every aim. And I wish to say there is no critical spirit. I am quite satisfied that the time has more than fully come for the establishment of what I will term an Official

Union Christian College in this Presidency—a College around which most of our Christian Societies may group, in whose management they may take part. And I think that our Christian Societies are doing very wisely to adapt to their purposes a well-founded and well tried structure like this rather than begin afresh. I accept the fact that such union has already been partially formed around this Institution amongst varied bodies of the christian workmen, who have but one aim for their labours in this country, as an evidence and guarantee of the biblical and catholic character of the christian teaching given, and to be given here. May therefore the union widen, and deepen, and be peace-making; and may there come with it the strength which mutual confidence and common christian aims confer.

But the earnest encouragement that I would bid to this Institution and all others of the same character carries with it no disparagement of our State or Native Schools or Colleges. These, too, are doing excellent intellectual work throughout the country and are advancing its moral tone by precept and example, by virtuous training and good culture. I accept the principle of perfect equality as respects religion which guides our State education as the best that we can follow under the circumstances, because the bulk of our fellow-subjects as yet seek no more; and I am not sorry to find the executors of our pledges very jealous of their trust. Those pledges, my native friends, will never be withdrawn except in obedience to your own wellmarked desire to annul them—if ever that day should come.

My native friends, I have well nigh done with you for this life; and I am sorry for it. But one long loving desire for you I will carry to my grave and it is this:—that every School and College—more especially those of your own founding and management—into which the marvellously quick, intelligent and susceptible youths of this land are thronging, may one day have in use the opened Word of God, and possess teachers who shall be free to take your loved ones past all beggarly dilutes and adaptations, right up to the free, simple, peaceful, lovely, christian law of God, to the Word full of grace and truth and of the spirit without measure.

It is these thoughts that lead me to bid God speed with all my heart to Christian Colleges and Christian Schools in this country where the Word of God and the truth of Christ are woven into the web of young intellectual life; to Schools and Colleges where—along with other precious gifts of culture—the minds of the young may learn to acquire the great truths of life at their holy source, and may be guided into an assured faith, assured hope, and a holy charity.

#### LANCASTER AND BELL.

(Concluded from page 432)

In speaking of Lancaster's system of rewards and punishments, instead of pointing out the real and palpable objections to it, she makes such remarks as the following:—"If the star which in this kingdom is the appendage of high nobility be adopted by him as the insignia of his order of merit, surely the emblem of MAJESTY [in capitals] should not be made a mark of disgrace and ridicule. Besides, it should be remembered that the Saviour of the world was

crowned with thorns in derision, which is another reason why the punishment is improper for a slovenly boy!"

She could not get over the stars, for in another part of her book she says:—"When one considers the humble rank of the boys of which common-day schools and charity schools are composed, one is naturally led to reflect whether there is any occasion to put notions concerning the origin of nobility into their heads, especially in times which furnish recent instances of the extinction of a high and ancient nobility in a neighbouring nation, and the elevation of some of the lowest of the people to the highest stations. Boys accustomed to consider themselves as the nobles of a school may in their future lives, from a conceit of their own trivial merits, unless they have very sound principles, aspire to be nobles of the land, and to take place of the hereditary nobility."

To this Sydney Smith says:—"For our part, when we saw these ragged and interesting little nobles shining in their tin stars, we only thought it probable that the spirit of emulation would make them better lawyers, ushers, tradesmen, and mechanics. We did, in truth, imagine we had observed, in some of their faces, a bold project for procuring better breeches for keeping out the blasts of heaven, which hewed through those garments in every direction, and of aspiring hereafter to greater strength of seam, and more perfect continuity of cloth. But for the safety of the titled orders we had no fear; nor did we once dream that the black rod which whipt these dirty little dukes would one day be borne before them as the emblem of legislative dignity, and the sign of noble blood."

I had marked for quotation many other curious and amusing passages from Mrs. Trimmer's book, but want of space compels me to curtail them. As when a cat howls upon the tiles her cry is taken up by all the "Toms" in the neighbourhood, so the wail of Mrs. Trimmer raised wails responsive from the upholders of the Church. Thus in June, 1806, the Rev. Archdeacon Daubeny, in a charge delivered at Sarum, said that Lancaster's system would "ultimately lead to general infidelity," and that as the plan spread "so far must Christianity in proportion decline." "The evil to be apprehended from the public support of a system which professedly rejected the established religion was the destruction of all religion." I have not room to quote even the titles of the works against Lancaster which followed the publication of the venerable archdeacon's charge. I will give only two as a "taste of their quality":—"A letter . . ." in which the "religious part" of "Mr. Lancaster's system" is "shown to be incompatible with the safety of the Established Church, and in its tendency subversive of Christianity itself: by John Bowles, Esq.;" and "the Crisis of Religion: a Sermon . . . by the Rev. E. W. Grinstead, M.A." Still the outcry against Lancaster produced little effect; the British school, like the British oak, seemed only to be the more firmly rooted by adverse winds. The charges made against Lancaster bore a strong resemblance to those made "in these last days" against the School Boards. He, like them, was charged with over-educating the poor, and with giving them "godless" instruction; and the outcry against him, as against them was never popular: it was the howl merely of interested persons.

As his system spread, Lancaster's expenses increased. The free school for a thousand children at the Borough-road, the training

college, the lecturing tours, all involved an outlay of money; and, as Lancaster was not the kind of man to sit down and count the cost before beginning to do anything, he found that in 1807 he was, notwithstanding liberal support from the public over £3,000 in debt. He was arrested, and taken to a sponging-house. Failing bail, he was removed thence to the King's Bench Prison, but his evident honesty and his earnestness so impressed the bailiff who arrested him, that he himself became security and Lancaster was discharged. One of his friends—Joseph Fox—drew bills for the amount of the debt, and they were accepted by another friend—William Corston—and duly honoured when they became due. The supporters of Lancaster now saw that if his system was to prosper, he himself must be deprived of any share in the management of its finances. Thomas Sturge, William Corston, Joseph Fox, William Allen, John Jackson, and Joseph Förster, accordingly, on March 1st, 1808, formed themselves into a committee of trustees. This was practically the establishment of the British and Foreign School Society. Lancaster's life work was now done; he invented a system of education which, whatever flaws the experience of eighty years may discover in it, was immeasurably superior to anything which preceded it; he had practically exemplified its working on a large scale; he had, by writing and lecturing, been instrumental in starting many schools; he had established a seminary, to provide for those schools teachers imbued with his spirit and acquainted with his plans. Now, the carrying on of the system was undertaken by a body of men whose love of education, though ardent as his, was tempered by business habits and a knowledge of the world. Had he, therefore, died now, his life would have been, dramatically, complete; but he was destined—I would almost say “doomed”—to live thirty years more. All the movement and passion of his *role* had been crowded into the first part; during the second he lagged superfluous on the stage. Since I have to do with him only as an educationalist, and his work as an educationalist was done when the British and Foreign School Society was established, I shall tell the remainder of his life in a few lines. He carried on the school and college at the Borough-road, delivered lectures, and brought out new editions of his works, till 1818, when he emigrated to America. After experiencing there many freaks of fortune—poor, neglected, and forgotten, he was run over in the streets of New York, and died on October 23rd, 1838.

It is difficult to mete out to him the exact amount of praise to which he is entitled, for while our national system of education, beyond a doubt, is the result of the movement commenced by him, it is hard to decide how much the result is due to him, and how much to fortunate accidents for which he deserves no credit. There was, first, the fortunate accident referred to at the beginning of this article—that, namely, of his being born at a time when the most enlightened of his countrymen were beginning to see that the disgraceful ignorance of the people was a constant source of weakness and danger—when, therefore, there were many prepared to welcome any plan which promised to place an efficient education within reach of the poor. Then there was the fortunate accident (if, indeed, “accident” it may be called) of his being a Dissenter and a Quaker; for as a Dissenter he would be unwilling to propagate the tenets of

the Established Church, while, as a Quaker, he would not be anxious to propagate his own. He would thus, of course, take up ground which might be occupied by all religious sects—their common Christianity. Then there was the fortunate accident of the existence of Dr. Bell; so that when the liberality of Lancaster aroused the indignation of the clergy, they had in Dr. Bell a weapon ready to their hands wherewith to combat him. Still, when every allowance has been made for happy circumstances, we must give Lancaster credit for much ingenuity in inventing a system of instruction, and for much enthusiasm in carrying it out. He did not build the great temple of national education, which is the chief ornament of our age, but he chose the site, and dug the foundations broad and deep. He may not deserve to have his name graven above its portals, but he is certainly worthy of a place in the memory of each one of us its priests.—DAVID SALMON, in the *Schoolmaster*.

### EDUCATION IN EGYPT.

A WRITER in the *Saturday Review* gives an interesting account of the present state of education in Egypt. Speaking of the schools in Cairo, he says:—There are at present 140,977 pupils under instruction. Of these 111,803 are in primary Arab schools, 15,235 in those attached to mosques, 1,335 are educated by Government, 8,981 by missions and religious communities, and 2,960 in the municipal schools. There are only two female schools returned, those started by the Khedive; but in the Copt and Mission schools little girls may be found, though very few indeed—a mere drop in the ocean of ignorance. It will easily be seen that the primary Arab schools educate more than two-thirds of the children, and that they consequently are of the first interest to any one anxious for the improvement of the national culture. Unfortunately, they seem to exist only in order to impart a parrot-like acquaintance with the text of the Koran. For this purpose only have they been endowed by pious people. Any one fresh from seeing an infant school in England would feel a sense of utter bewilderment on entering one in Cairo. Everything is topsy-turvy. The children read and write from left to right, and even begin to learn their sole lesson-book, the Koran, backward, because the latter chapters are easier and more important. The consequence is that, after a few visits to Arab schools, one cannot help a feeling of surprise when a child sneezes, or shows that he is changing his teeth at the same age as a little European.

One primary school in Cairo is well worth having a peep into. You open a door in the street, and find a room about ten feet square. It is below the level of the road, and lofty for its size. A grated window, high up, gives a dim light; but a flood of sunshine comes in at the open door, and strikes full on the bright crimson robe of the *fukeeh*, as he sits on his cushion in the corner. At one end stands the only piece of furniture in the room. It looks like a large harmonium done up in brown holland, but turns out to be a box containing the bones of a saint. In front of this curious piece of school furniture squat four-and-twenty little black and brown boys. One or two are disguised as girls, to protect them from the evil eye. All have dirty faces, and several are suffering from ophthalmia. They sit in two rows facing each other, and simultaneously rock their

bodies violently backward and forward as they recite the alphabet, or that verse of the Koran which forms their day's task. The children shout at the top of their little cracked voices in a nasal tone far from musical. The noise they contrive to make is astounding, considering how small they are. If they cease their rocking and shrieking, even for a moment, the master brings down his long palm cane upon their shaven skulls, and they recommence with renewed energy, and an even more violent see-saw. The sentence repeated does not convey the slightest meaning to their minds, nor is any attempt made to explain it. Two or three older children are sitting beside the *fakkeh*, getting lessons in the formation of the Arabic characters. Their copy-book is a piece of bright tin, and they use a red pen called a *kalam*. The ink-bottle is a box containing a sponge saturated with some brown fluid.

A long row of tiny slippers, of every form and colour, lies neatly arranged as the door; for the place where the bones of a saint are enshrined is holy ground, and no one may soil the clean matting of the floor with outside defilement. No register is kept of the pupils, or of their days of attendance. Indeed, although the *fakkeh* can repeat the whole of the Koran off book, it is highly probable he would find some difficulty in counting up to the number of his scholars. His requirements begin and end with a textual knowledge of the sacred book, and unfortunately the wishes of his pupils' parents with regard to the education of their children are bounded by the same narrow limits. The schoolmasters are miserably paid, mostly in kind, for plaques are scarce; but they exercise considerable influence, and no marriage or family feud is complete without their presence. In better-class Arab schools a little arithmetic is sometimes taught, but not always. Boys who wish to pursue that branch of their education generally learn from the public *gabdal*, a man whose business it is to weigh and merchandize. A child whose father keeps a shop is taught by assisting in it. Geography is also neglected, which is fortunate, as nothing can be more ludicrous than the lessons when they are attempted.

The teaching is, of course, entirely based upon the Koran, which upholds Mr. Hampden's views with regard to the shape of the earth. The children learn that it takes 500 years of travelling to get round the mighty plain, while perhaps a few yards from the school door hangs one of Mr. Cook's placards, offering to do the whole business in 90 days. It must be a little hard to explain all about the seven earths and the seven heavens, and the seven climates and the seven seas of light. The one important fact which the children retain is that Mecca is the centre of the earth. At present each boy comes to the master with his lesson, says it, and returns to his seat. He is succeeded by another, and so on during the whole day. This would be impossible if more than reading and writing were taught.

Of the mosque schools the ancient El Azhar is still the most important. It provides instruction, such as it is, for more than 11,000 pupils. A considerable number are housed and fed within its hospitable walls. The scholars are of all ages, and come from the most remote provinces as well as the larger towns. They may stay as long as they like and go there when they please. If they are rich they make presents to the professors, who are paid catrally by voluntary donations; if they are very poor they receive help from their

Alma Mater in the shape of food. The *baksheesh* of 500 sheep sent one day by the Viceroy on the occasion of a family rejoicing was therefore not unacceptable. The school is, in fact, a great free national university for the teaching of the theology of the Koran. There are few rules; there is no compulsory course of study; there is no roll-call or classification of students. Curiously enough, coffee and tobacco are here forbidden within the walls; but, no doubt, the students rich enough to have rooms outside make up for the deprivation by an extra allowance at home.

Some of the Coptic schools are well worthy of a visit. The principal one in Cairo is exceedingly well attended. The boys look as if their intelligence was cultivated, and many of them read and speak either French or English with ease and a good accent. They seem to have a great interest in each other, and to feel a genuine pride in seeing their companions show off their small accomplishments to strangers. The Copts take some pains to teach their girls, and have two fairly well managed schools at Cairo. The children are taught reading, writing, arithmetic, singing, and needlework.

### POPULAR ERRORS.

In a very clever little book published not long since, M. Tarnier, inspector of primary instruction in Paris, called the attention of French teachers to an extraordinary number of mistakes he had discovered in popular educational works, as well as in examination papers and in the language used by examiners. He is considerate enough to mention no names—a circumstance at which one is perhaps the less inclined to wonder when the monstrous character of some of the blunders exposed is considered. If French children are often taught that salamanders are incombustible and that they have the property of putting out fires, that the tongue of a viper darts out poison, that the pelican feeds its young with its own flesh, that dying swans sing, that earwigs penetrate through people's ears into their heads, and that a man's stomach is situated in his chest, why the subject of primary instruction in France clearly demands the urgent attention of statesmen. In respect of the first indicated of these mistakes, M. Tarnier shows a happy unconsciousness of the existence of societies for the total suppression of vivisection, &c., for he recommends anybody who believes salamanders incombustible to set one on a burning brazier and watch the result. Some other errors instanced by M. Tarnier are probably very widely spread: e.g. many persons, otherwise well educated, speak of a bat as a bird, and of a whale as a fish; whereas, of course, of course, bats and whales are mammals. The goose and the ass are, again, held up as examples of stupidity by persons who ought to know better. M. Tarnier thus takes up the defence of the goose:—"He is as silly as a goose." I regret that want of space does not permit me to demonstrate the falsity of this saying by examples chosen from domestic life, and in spite of the objection with which I may be met, that the goose allows itself to be plucked alive without uttering a cry. How would its cries help it? Its silence does honour to its philosophy. . . . But, it will be said, the goose looks silly. Agreed; but how many men look fools and are not! And again, how many do not look fools, and are worse than fools! Let us



beware of repeating, even in jest, such false maxims; for, whatever people may say, proverbs are not always the quintessence of the wisdom of nations." So much for errors in zoology. Turning to botany, what mistake is more common than to speak of the potato as a "root?" As a matter of fact, it is a branch growing under the earth. In the language of science, the potato is a tubercle. In chemistry a popular error is to say that mercury is quicksilver. Mercury has no quicksilver at all in its composition. Who does not know the beautiful "silver paper," as children call it, which is wrapped round cakes of chocolate and other good things? It is popularly supposed to be of lead, and is really of tin. "How heavy the air is!" we occasionally say in these northern latitudes, especially when we "enjoy" the summer described by Horace Walpole of "three hot days and a thunderstorm." The expression is exactly the contrary of that which we should use. We say that the air is heavy when the pressure exercised by the atmosphere has diminished; when, as a consequence, the air is lighter. An amusing chapter is given by M. Tarnier to "Young Ladies' Arithmetic," which is indeed often a fearful and wondrous thing. One error he points out, however, is shared by some members of the other sex. Thus you are told that you cannot add together 3 apples and 2 pears; whereas you can perfectly well, the result being 5 fruits. So 4 whiteheart cherries + 4 black cherries = 8 cherries. 2 gold watches added to 2 pigs makes 4 tangible entities.—*Pall Mall Gazette*.

### THE TEACHERS' TRAINING AND REGISTRATION SOCIETY.

*Paper Read at the Teachers' Conference, Jan. 9th,*

*By Miss Shirreff.*

LADIES AND GENTLEMEN,—Miss Chessar had undertaken to lay before you to-day an account of the lately-formed Teachers' Training and Registration Society, and of the College which that Society will shortly open. She is, I regret to say, prevented by illness from addressing you, and I, as a member with herself of the Council of that Society, come to supply as far as I can the place thus left vacant.

But before speaking of the College it will not be useless to dwell for a few minutes on the causes which have prevented such Colleges from existing among us long ago. And I think the chief cause is not far to seek. I find it in the fact that education has been treated empirically, that it has not been studied philosophically, it has not been traced to its roots in the study of human nature, and therefore Teaching, as an important branch of education, has been lightly considered. For if no scientific principle is at the foundation of education, then no sound system of training teachers can be established; there may be technical methods founded on experience, which will teach men to avoid many mistakes and to reach better results, but such methods are dry and unfruitful in the hands of those who do not go beyond them. It is not by possessing them merely that a trained teacher will acquire over the hearts and intelligences of his pupils a power that the untrained does not possess. A born teacher will possess that power without study,

and the opponents of training talk much of born teachers; but how many such have we known? How many has the world known from the days of Socrates till now? Certain it is that a Comenius, a Pestalozzi, a Froebel, an Arnold, will not be made by training; neither is any great writer of prose or verse made by study; and yet we shall hardly say that the study of grammar and logic and rhetoric are not requisite to form the average good writer. That light within which we call Genius, which illuminates to those who possess it some province of human life, or of nature with a clearness and a beauty unknown to our ordinary ken, is a great gift from Heaven; but we cannot leave all the every-day work of the world to be done by the gifted, nor cease to make that work as good as we can, because such gifts come rarely to assist us.

The argument against the scientific study of education—if argument it must be called—is one of that class whose feebleness excites our amazement at the hidden force of precedent and prejudice that props it up in an age of knowledge and research. Education doubtless can be scientifically studied apart from teaching, since it is the parent study, so to speak, which we may or may not follow to its practical issues; but that any one should seriously and earnestly contemplate undertaking the task of a teacher, in other words, the moulding of human character, the development and cultivation of human faculty in children, and not seek his way to the source whence the principles of his work must be derived, is a mystery that baffles understanding.

I believe that all the shortcomings of education among us, all that keep it still so unsystematic, so wanting in distinct purpose, all that makes those Germans who admire us most as a nation, proclaim that we are what we are, in spite of our schools,—all this I have no hesitation in affirming is owing to this one neglect of the scientific groundwork of human training. Next to this, ignorance of education as a science, which leaves teaching to represent the whole duty of the educators—the greatest obstacle to a better view of things—is the strange belief that knowledge of a subject implies capacity to teach it; whence it has arisen that the establishment of Normal Colleges for elementary schoolmasters and mistresses had no effect whatever upon the state of opinion respecting the masters and mistresses of secondary schools. It seemed natural when teachers were to be largely drawn from an uneducated class, that they should require training for their office; but it was the necessity of giving them a certain amount of knowledge which seemed to justify the measure. Those who possessed knowledge never dreamed that they could in any respect stand in the same category with the others. Even now it is not very uncommon to hear men complacently admit the advantage of training for women teachers, while they believe that their own possession of a University degree places them quite above such considerations. Yet we have had evidence enough from some of the best teachers in England that they have painfully felt their own deficiency, such evidence has been quoted over and over again; I will only mention here a fact I have heard lately from Miss Chessar that more than one teacher has said that seven years of his life might have been saved if he had known anything of his work before he began it. Seven years of a laborious, perhaps devoted life, more or less wasted! and with them so much



of the lives of the children under tuition—a whole school generation sacrificed for every man who rashly or ignorantly undertakes a task—more important than any other human task—without having spent as much time in preparing for it as a cobbler would spend in learning to mend old shoes!

The teacher's calling alone has not been deemed in England worthy of distinct preparation; alone of all the arts, from the highest to the most mechanical, it has not been held to be worth an apprenticeship. It is not only that the higher vocations of the law, of medicine, of theology, cannot be approached without due professional training, but that every trade is in the hands of those who have learned to exercise it; that no man would place his dog or his horse under the care of one who had not learned the right mode of caring for them; only his children, only their moral and mental health, the direction to be given to their habits and their activity perhaps for life, does he recklessly put under the guidance of men and women who have never given an hour's earnest study to the methods, by which that guidance should be exercised; or to the principles on which the right methods rest.

It would seem incredible, it would sound like the ironical travestie of the doings of a people who pique themselves on being practical, if we did not see it daily before our eyes. It is remarkable as we read the history of education among that unpractical nation the Germans, that every man who tried to be a reformer of schools, founded by the side of his school a seminary for training teachers in the better system he had inaugurated. The two ideas seem inevitably linked, whereas in England, where we have for many years at least been honestly striving to improve our whole system of secondary education, never yet has it been accepted as a clear necessity that teachers must be trained in order to make any reform effectual.

Some efforts have indeed been made now and then. For men a Training College for Secondary Teachers was opened at Bristol about two years ago, but no sufficient inducement exists to make students seek it. For women more has been done. The Home and Colonial Training College has for many years had a department for governesses, and there are some private institutions in which methods of teaching are more or less taught, but without, as far as I know, any scientific training. It is evident that all this is utterly inadequate; what we want is recognition of this same necessity for all, a system embracing the whole subject in its fullest scope, and sufficient pressure brought to bear to make the training practically obligatory. And there are hopeful signs—we may even say now more than that—there are positive signs, that the hour of reform has struck in some quarters, and is drawing near in others. The change of opinion once begun has made rapid progress, as we may convince ourselves by glancing at the fate of different plans that have been put forward within the last few years.

I need not before such a meeting as this enter into any detail of the various attempts that have been made in the last few years. You all know as well as I do the history of successive failures from the dropping of the second part of Mr. Forster's Education Bill, to the ill success of the Scholastic Registration Association, and the efforts of Sir James Kay-Shuttleworth and the late Lord Lyttleton. All failed. But good seed had been sown. Favourable opinion from

slowly. This is a case that happens over and over again, at first the appearance of indistinctness is rather occasioned by not having seized the object, not having got hold of it at all. In the same way that obscurity where you have only a misty notion, so you have with everything presented to you for the first time, which will clear up by development. A great deal of the lecture was occupied with the discussion of a subject that must be difficult to follow by those who have never looked into it before; and if we were to be examined in it we should not, I fear, pass very well! When a matter has not sunk deeply into the mind we cannot discuss it so thoroughly as when we have looked deeper into it. Take the example that occurs to me every day. I ask people to tell me how they hear the peasant speak in different parts of the country. There are few who can give me even a rough conception, for although that is an instance of very familiar observation coming before them constantly, they do not know how to apply it. It is an observation that they have never observed.

Miss HEERWART being called upon to give her views of the question, said that in order to bring anything clearly before the minds of children, one ought to adopt the method of Pestalozzi. When the object itself is presentable, it should be shown to the child, and thus a clear idea will be formed in his mind. After showing the object, the next important matter is to have the right name for it, and we have then given the child a piece of positive knowledge. In the infant age this is the beginning of all right knowledge. In the case of older children, one expects them to have some experience, and to be acquainted with a number of things. For young children the teaching cannot be too objective, and it is important that the children should, as far as possible, work out their own objects. This is the intention of Kindergarten exercises and marks the difference between the method of Froebel and that of Pestalozzi, and is of real importance in the method of teaching.

Mr. LAKE—I should like to ask Miss Heerwart if it has been her habit to notice the mental action that goes on in the minds of the children whom she is teaching? Does she consider that this is one of the duties of a teacher? This is a point to which we can direct our attention more than we have done, viz.,—the inter-action between the minds of teacher and pupil. We ought to have a record of such inter-action.

Miss HEERWART—I have myself had important experience on this point. I have tried to find out how thought is formed in the child's mind. I think we must let the children have time to develop the idea and not hurry them at all, but proceed slowly.

Miss MOONROSE—There is one difficulty which strikes me. If you wait for the slow children, those who have already grasped one idea, are tired of waiting for the next, and it is difficult to keep up the interest of these children.

Mr. LAKE—You must note the actual condition of each pupil. Put the question to the class, while you are working with the slow child; because any idea brought before the mind develops itself in the manner described in my lecture, and if the idea is grasped and you have the nerve net-work corresponding to it fairly brought into operation, it will reach a point where it will be associated with another thought and so the train will proceed. Thus while one pupil is working at the first stage of an idea, the other is proceeding with its development. Besides, the action of one mind tells upon that of another, accelerating its speed.

Miss MOONROSE—But will not the second question get answered too quickly by the first child, while the dull child has not yet arrived at the answer to the first?

Mr. LAKE—But you get the child to think for himself even if he has not reached the second point?

Miss MOONROSE—Well, one child thinks for the other!

Mr. LAKE—You are assuming that all the workings of the first child's mind are spoken out, whereas much is simply germinating in his thoughts. You do not ask for the answer until you are ready for it.

Miss CARPENTER—Would you advance then at just the same rate as the dullast child in the class?

Mr. LAKE—No, I should feel it a duty to urge forward the slowest child; but we accelerate the pace of the child's mind by the action of our own mind upon it. I think my mind would gradually bring his to move more quickly.

Miss CARPENTER—But I was thinking about one special occasion. Would you keep the class back until the slowest child grasped the idea?

Mr. LAKE—No, but I would leave that child and give it time for the idea to incubate. If the class is up to the standard to receive the ideas, then you may go on with your subject; but with a class such as I have had to-night one must proceed differently.

Mr. COOK stated that the boy who was examined on the previous occasion had since told him that after he reached home his ideas became clear and precise with respect to the subject upon which he had been examined.

The CHAIRMAN—Given the emotion, and the mind will arrive at a clear idea.

Mr. LAKE—Then this shows that the teaching was good.

The CHAIRMAN—I have often left a matter quite unclear in my mind on retiring for night, and in the morning have had a perfectly clear notion of the matter.

Mr. LAKE—Just so: a case of unconscious cerebration; but then, unless your mind had been on the right track you would not have reached the correct result. If you had had a "confusion of thought" as distinguished from an "incomplete idea," you would not have come to the point so happily.

A vote of thanks to the Chairman concluded the proceedings.

#### APPOINTMENTS.

*From 16th August to 15th September 1878.*

Babu Sasibhushna Palit, to be Uriya Assistant, Zillah School, Berhampore, on Rs. 50.

C. Sadagopa Chetty, 2nd Assistant, to act as 1st Assistant, Zillah School, Kurnool.

R. Udiappa Row, 3rd Assistant, to act for the 2nd Assistant, Zillah School, Kurnool.

A. G. Subramania Iyer, to be 2nd Assistant on Rs. 200 and to act as 1st Assistant, Provincial College, Rajahmundry.

P. Sreenivasa Row, to be 3rd Assistant and to act as 2nd Assistant, Provincial College, Rajahmundry.

D. Narrainsawmy Naidu, 4th Assistant, to act as 3rd Assistant, Provincial College, Rajahmundry.

V. Vasudeva Sastri, to be 5th Assistant and to act as 4th Assistant, Provincial College, Rajahmundry.

P. Subaroyalu, 6th Assistant, to act as 5th Assistant, Provincial College, Rajahmundry.

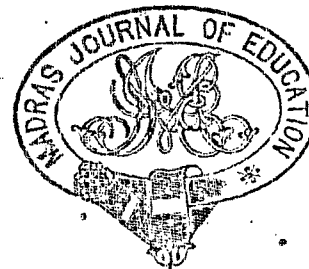
I. Visvannada Sastri, to be 7th Assistant and to act as 6th Assistant, Provincial College, Rajahmundry.

Y. L. Narasimham, 8th Assistant, to act as 7th Assistant, Provincial College, Rajahmundry.

B. Kannakarazu, to act as 8th Assistant in the Provincial College, Rajahmundry.

J. Purnayya Pantulu, Head Master, Taluq School, Ankapalli to be Head Master, Anglo-Vernacular School, Chicacole, substantive *pro tem* on Rs. 50.

V. B. Lakshminarasimham, 2nd Normal Master, Narsipore, to act as Head Master, Taluq School, Ankapalli.



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(Subscribers are reminded that the advance subscription for 1879 is now due.)

#### THE MONTH.

THE Professorship of Vernacular Literature vacant by the death of Mr. Walter Joyes, has been filled up by the appointment of Mr. Seshagiri Sastri, M.A., with the new title of Superintendent of Vernacular Studies, and the salary of the appointment has been reduced. Mr. Seshagiri has been Sanskrit Examiner for the University, and has the reputation of being a fair Sanskrit Scholar, but we are not aware that he has more than an ordinary knowledge of any of the Vernaculars.

STUDENTS for the First Arts Examination of 1880, will be glad to learn that arrangements have been made with the proprietors of the copyright, for the issue of a cheap edition of Macaulay's Essay on Rarère. The Essay will it is hoped be ready for students in about a month's time. Subscribers should at once order of the Manager of this Journal the number of copies they require, as only a limited number will be printed. An annotated edition of Tennyson's Aylmer's Field is also in the press.

THE figures showing the number of Candidates registered for the late Matriculation and First Arts and for the ensu-

ing Degree Examinations of the Madras University are as follows:—

|                    |       |
|--------------------|-------|
| Matriculation..... | 2,647 |
| First Arts.....    | 683   |
| B. A.....          | 237   |
| M. A.....          | 5     |
| B. L.....          | 38    |
| B. C. E.....       | 5     |

We regret that while there are so many Candidates for the Law, there are no Candidates for the Medical degrees.

Mr. Chisholm the Superintendent of the School of Industry and Arts at Madras, intends to get up an exhibition of the products of the present year's work in that school.

The native youths who can paint a picture or engrave on wood or copper or who can stain glass are few indeed, but the country is the worse for this poverty of Art Students. Pictures, prints or engravings that embody noble thoughts, that depict heroic acts, or that bring nature from the fields or the streets into native homes, will make them more pleasant, sweeten domestic life and shed a grace about it. Workers in Art will be so many practical teachers in Native Homes, and will create means of popular education and helps to self-culture. To judge what can be done to decorate the homes of the people and illustrate vernacular books, one need only pay a visit to the School of Arts. Mr. Chisholm has completely altered the aspect of the place and converted what used to be called a "Pottery Shop" into a real school for Art instruction; what is now most needed is the active support and co-operation of the educated Natives. Fresh pupils of fair intelligence and general education, and a better building than the wretched godowns in which the class is working should be provided. Without the support of the sons of the soil we fear that comparatively little good will be effected, however great Mr. Chisholm's exertions may be.

VILLAGE Teachers' *Helps and Guides*. The so called "Helps and Guides" which the Native Printers have provided for the use of the Result Grant Schools in Villages it is said have proved to be very hurtful to sound education. The teaching in the village schools has become mechanical and almost useless, and the Director of Public Instruction has

issued an order prohibiting the use of these "Helps and Guides" in future, and strictly warning the Deputy Inspectors against contenting themselves with mere synonyms given from such books in their periodical examinations.

A Telugu novel based on the story of Goldsmith's *Vicar of Wakefield* has been brought out by the young Telugu Pandit of the Rajahmundry College. If it is well adapted, and is in point of style as lively as the English original, it is sure to be read.

Messrs. Trübner and Co., have lately published as the third volume of their Oriental Series an English translation of Dr. Albrecht Weber's *History of Indian Literature*. We agree with Dr. Bühler in thinking that this book should be found in the Library of every Indian School, as it is the first and only scientific work treating fully of Vedic Sanskrit and Prakrit Literature. The fourth volume of the same series is entitled *The Modern Languages of the East Indies*, it is accompanied by two language maps, lists of languages and dialects, &c. The object of the work is thus stated:—"The Author has attempted to fill up a vacuum, the inconvenience of which pressed itself on his notice. Much had been written about the languages of the East Indies, but the extent of our present knowledge had not even been brought to a focus. Information on particular subjects was only to be obtained or looked for by consulting a specialist, and then hunting down the numbers of a serial or the chapters of a volume not always to be found. It occurred to him that it might be of use to others to publish in an arranged form the notes which he had collected for his own edification. Thus the work has grown upon him."

GREAT changes are to be carried out in the Mysore Educational Department. The posts of Inspectors are to be abolished; the present Incumbents, Messrs. Hodson and Marsden being provided for otherwise—the former going to British Burmah and the latter as the Principal, Morena High School. It is intended, we believe, to create some minor Inspectorships to be filled by natives, each Circle to combine two districts.

Messrs. Cupdy and C. M. Leonard will, it is said, join their substantive appointment as Head Masters, Mysore and Shemogah High Schools respectively.

We understand that Mr. Rice, Director of Public Instruction has gone out to the Chief Commissioner's Camp to confer with Mr. Gordon regarding some of the minor details of the new scheme. After a short time, we believe, it is in contemplation to abolish the Director of Public Instruction for Mysore, in which case Mr. Rice will be promoted and transferred to Bengal.—*Bangalore Spectator*.

The November number of the *Indian Antiquary* contains a very interesting dissertation on the Malayala Language by the celebrated F. W. Ellis, the translator of Selections from the *Kural*, and the writer of the valuable Note on the Correlation of the Dravidian Dialects that is printed as an introduction to Campbell's Telugu Grammar. These two dissertations are as Dr. Barnell observes of remarkable historical interest and prove that before 1816, when Bopp first published his *Conjugations System* which was the beginning of Comparative Philology in Europe, "Mr. Ellis had already foreseen the possibility of Comparative Philology not only as regards the so-called Aryan tongues but also in respect of the Dravidian."

As Mr. Ellis died early in 1819 and as (considering the means of intercourse available in those days) he could hardly have seen or heard of Bopp's work, he must in future, as Dr. Barnell goes on to observe, "be considered one of the originators of one of the most remarkable advances in science of this century. His unfortunate end—he was poisoned by accident—prevented his doing much, for he was only forty when he died, but he cannot be robbed of his due fame by the success of others more lucky than he was."

Sir Walter Elliot who recently discovered the proof sheets of this treatise on the Malayala language among some papers taken to England from Madras, found also two manuscripts filled with rough copy of a Treatise on Tamil Prosody abounding with Extracts from the Southern poets. These manuscripts Sir Walter Elliot offers to place at the disposal of any Tamil scholar who will undertake to edit and publish them within a given time. In the dissertation on the Malayala language, Mr. Ellis seems to take for granted that it is derived from Sen-Tamil, but Dr. Barnell thinks that Sen-Tamil "is to a great extent an artificial poetical dialect, though it has preserved some old forms." If this view be correct, it follows that Sen-Tamil can neither be the parent of Malayala nor of Kodan-Tamil, but

that all these dialects must be derived from some older speech long since decayed.

Mr. HOWELL, a Eurasian gentleman, a native of Madras, who has for many years been Professor of Tamil and Telugu at Kings' College, London, has been appointed to the recently established Lectureship in those languages at the University of Oxford, and the Rev. J. Sharp, M.A., lately Principal of the Noble High School, Masulipatam, has been appointed to the Telugu Lectureship established in the Cambridge University.

Mr. S. M. E. Kempson, B.A., formerly Director of Public Instruction in the North-West Provinces, has been appointed to teach Indian History and Geography to students at the University of Cambridge who are preparing for the Indian Civil Service Examinations. The salary of the appointment which is made by the Board of Historical Studies is £100 per annum.

We learn that Samuel Sattianadhan, who accompanied his father the Rev. W. Sattianadhan to England, has entered as an undergraduate of the Cambridge University at *Corpus Christi College*. Young Mr. Sattianadhan is only 16 years of age, but about three years ago he went up from the S. P. G. High School, Vepery, for the Matriculation Examination of the Madras University and passed in the First Class. He is a youth of considerable promise, and is expected to take high mathematical honours when the time comes.

We hear that it has been proposed to send to England to engage a new officer for the Inspectorate of the First Division vacant by the death of Mr. Kershaw. We trust that this is not a serious proposal, for we feel sure there are many gentlemen already in the department who could fulfil the duties much more efficiently than an inexperienced newcomer.

As might be expected, a German *sarav* obtained the first prize (2,500 francs) offered by the Oriental Congress at Florence for the best essay on "The different phases of Aryan Civilization in India;" but Western India obtains the chief share in the remaining honours in this competition. The second prize (1,000 francs) is awarded to a Mahratta Brahmin, Mr. Mahadeo Moreshwar Kunte, M.A., of the Bombay University, and headmaster of the Poona High School. Another Bombay man, Dr. Gerson DaCunha, takes another prize.

## THE CERTIFICATE EXAMINATION.

THE Examination for Certificates of the Educational Department was held on the 3rd, 4th and 5th December. The following statement shows the number of candidates, both male and female, with their Vernacular languages:—

## CANDIDATE MASTERS.

| Fourth Grade.             | Fifth Grade.   |
|---------------------------|----------------|
| 73 English and Tamil.     | 128 Tamil.     |
| 9 English and Telugu.     | 67 Telugu.     |
| 2 English and Canarese.   | 11 Canarese.   |
| 7 English and Malayalam.  | 71 Malayalam.  |
| 2 English and Hindustani. | 21 Hindustani. |
| 2 English and Oriya.      | 15 Oriya.      |
| 1 English.                |                |
| Total 96                  | Total 313      |

University Candidates in Method only 68 .

University Students in Normal Schools, also examined in Method only 40

## CANDIDATE SCHOOLMISTRESSES.

|                     |               |
|---------------------|---------------|
| 45 English          | FIRST GRADE.  |
| 3 English and Tamil |               |
| 4 Tamil             |               |
| 120 English         | SECOND GRADE. |
| 7 English and Tamil |               |
| 30 Tamil            |               |
| 119 English         | THIRD GRADE.  |
| 105 Tamil           |               |
| 11 Telugu           |               |
| 3 Canarese          |               |
| 9 Malayalam         |               |

Total 486

In the number of Fourth Grade Male Candidates, there has been a gradual falling off for some years. This year the number is, we believe, lower than ever before; and this is not to be wondered at, seeing that the Government Normal Schools at Vellore and Trichinopoly, that used to send up a considerable number of candidates have been abolished. Another cause of the falling off in this Grade is the fact that the U. C. S. Examination, and even that for Matriculation, are not much more difficult, while passing them is of more general value, qualifying for all departments of Government Service while the Certificate Examination qualifies for but one department, that one being the worst paid, and, therefore, the least popular of any.

The number for the Fifth Grade, where no knowledge of English is required, is considerably greater than it has been in some recent years, and the increased numbers for Examination in Malayalam, Hindustani and Oriya, are encouraging, showing great Educational progress in elementary education, particularly on the West Coast, where it is due, we believe, very much to the establishment of elementary Normal Schools by the different Local Fund Boards. This is an example that might well be generally followed by similar Boards, in preference to establishing Local Fund Schools, as many of the Boards have done, at a great and lasting expense, and with but little advantage to elementary education, which, it cannot be too often re-iterated, can be improved only after the teachers have been improved. As the Fifth Grade Schoolmasters must form the great body of elementary teachers, we are glad to see that the number of Candidates for this Grade is above three hundred.

"University Candidates in Method" are, as we may explain, mostly teachers, who have passed some University Examination, the B. A., the F. A., or the Matriculation, and who are required to pass an Examination in Method, before they can be ranked as "Certificated" teachers.

"University Students in Normal Schools" are similar to the last-named, but trained in Method and teaching, in some Normal School. After passing, these become "trained and certificated" masters, and will, ultimately, if they do not now, possess certain advantages in the way of preference for employment and higher grants. Their relative status is, we believe, one of the points settled in the revised grant-rules which have been for some time under the consideration of Government, and the early issue of which is looked for.

The number of female candidates is also encouraging, as affording evidence of progress in Female Education, since this Examination really supplies, for girls' schools, very much what the Matriculation Examination does for boys' schools, namely, the standard at which all the more advanced among them aim, and by their success in which they are judged. When the results of the present Examination are published, we hope to be able to give a comparative statement, showing the number in each grade sent up by each school, and the number passed. The aggregate of nearly five hundred female candidates for a testing Examination on paper,—in the case of over two hundred of them of a really difficult character,—shows Female Education in this

Presidency to have reached a point that would have been despised of ten, we might almost say, five years ago. In the meantime it may not be uninteresting if we give the following extract on the subject, from the report of the Director of Public Instruction in this Presidency, for the official year 1876-77—which is the latest available. He says:—

The Teachers' Certificate examination has, in the absence of any other middle-class examination, become a sort of general test of the work done in girls' schools. The following is a complete list of all schools which succeeded in passing candidates for these examinations, including teachers and pupil teachers as well as pupils.

| Schools.                                             | First Grade. |               | Second Grade. |               | Third Grade. |               | Total. |
|------------------------------------------------------|--------------|---------------|---------------|---------------|--------------|---------------|--------|
|                                                      | First Class. | Second Class. | First Class.  | Second Class. | First Class. | Second Class. |        |
| I.                                                   |              |               |               |               |              |               |        |
| Davidson Street School, Madras .....                 | a 1          | 2             | 3             | 1             | 1            |               | 15     |
| Government Female Normal School...                   | 2            | a 1           | 3             | 1             | 2            | 1             | 10     |
| Do. do. do. School .....                             |              |               |               |               |              |               |        |
| Practising Branch .....                              |              |               | 1             |               |              | 1             | 2      |
| Wesleyan Mission Mixed Day School,<br>Madras .....   |              | 2             |               |               |              | 2             | 5      |
| Dorseton Girls' School .....                         | b 1          |               |               |               | 2            | 2             | 5      |
| Convent Girls' School, Mangalore .....               | a 1          | a 1           |               |               | 2            |               | 4      |
| St. John's School, Bangalore .....                   |              | a 1           | 1             |               | 1            |               | 3      |
| Day School, Coonoor .....                            |              | a 1           |               |               | 1            | 1             | 3      |
| Wesleyan Mission Girls' School, Ban-<br>galore ..... |              | a 1           |               |               |              | 1             | 2      |
| II.                                                  |              |               |               |               |              |               |        |
| Free Church Mission Girls' Day<br>School .....       |              |               | a 1           | 4             | 4            |               | 9      |
| Lawrence Asylum, Ootacamund .....                    |              |               | 1             | 6             | 1            |               | 8      |
| German Mission Boarding School,<br>Calicut .....     |              |               |               | 2             | 4            |               | 6      |
| Day School, Coimbatore .....                         |              |               |               | 1             | 3            | 1             | 5      |
| St. Joseph's School, Calicut .....                   |              |               |               | 1             | 3            |               | 4      |
| Emmanuel Church School .....                         |              |               |               | 2             | 1            | 1             | 4      |
| Remount Depot School, Oossoor .....                  |              |               |               | 2             | 1            |               | 3      |
| Christ Church School, Nellore .....                  |              |               | 1             |               | 1            | 1             | 3      |
| St. Francis Xavier's School, Madras...               |              |               | 1             | 1             | 1            |               | 3      |

a. Teacher.

b. Pupil-teacher.

| Schools.                                      | First Grade. |               | Second Grade. |               | Third Grade. |               | Total. |
|-----------------------------------------------|--------------|---------------|---------------|---------------|--------------|---------------|--------|
|                                               | First Class. | Second Class. | First Class.  | Second Class. | First Class. | Second Class. |        |
| III.                                          |              |               |               |               |              |               |        |
| Sarah Tucker Female Training Institution      | ...          | ...           | ...           | ...           | 14           | 1             | 15     |
| Presentation Convent School...                | ...          | ...           | ...           | ...           | 10           | 5             | 15     |
| Mengamapuram Girls' English Tutor School      | ...          | ...           | ...           | ...           | 8            | ...           | 8      |
| Military Female Orphan Asylum                 | ...          | ...           | ...           | ...           | 5            | 1             | 6      |
| Free Church Mission Boarding School.          | ...          | ...           | ...           | ...           | 5            | ...           | 5      |
| Mrs. Kohlhoff's Seminary                      | ...          | ...           | ...           | ...           | 3            | 2             | 5      |
| Christ Church Girls' School, Madras           | ...          | ...           | ...           | ...           | 2            | 3             | 5      |
| American Arcot Mission School, Chittoor       | ...          | ...           | ...           | ...           | 2            | 2             | 4      |
| London Mission Girls' School, Black Town      | ...          | ...           | ...           | ...           | 2            | 2             | 4      |
| Wesleyan Mission Girls' School, Royapettah    | ...          | ...           | ...           | ...           | 1            | 3             | 4      |
| Union School, John Pereira's                  | ...          | ...           | ...           | ...           | ...          | 3             | 3      |
| London Mission Girls' Boarding School, Vepery | ...          | ...           | ...           | ...           | ...          | 23            | 23     |
| Black Town Girls' Central School              | ...          | ...           | ...           | ...           | 2            | ...           | 2      |
| Indian Instruction Society's Normal School    | ...          | ...           | ...           | ...           | 1            | 1             | 2      |
| S. P. G. Mission School, Tanjore              | ...          | ...           | ...           | ...           | 1            | 1             | 2      |
| London Mission Hindu Girls' School, Vepery    | ...          | ...           | ...           | ...           | 1            | 1             | 2      |
| Roman Catholic School, Palaveram              | ...          | ...           | ...           | ...           | 1            | ...           | 1      |
| London Mission Girls' School, Vanimbady       | ...          | ...           | ...           | ...           | 1            | ...           | 1      |
| Girls' Boarding School, St. Thomas' Mount     | ...          | ...           | ...           | ...           | 1            | ...           | 1      |
| Kadaachapuram Girls' Day School               | ...          | ...           | ...           | ...           | 1            | ...           | 1      |
| Madras Poor School                            | ...          | ...           | ...           | ...           | 1            | ...           | 1      |
| S. P. G. Mission School, Anickadu             | ...          | ...           | ...           | ...           | 1            | ...           | 1      |
| London Mission Girls' School, Bellary.        | ...          | ...           | ...           | ...           | 1            | ...           | 1      |
| Private study                                 | ...          | ...           | ...           | ...           | 1            | 2             | 4      |
| Total...                                      | ...          | ...           | ...           | ...           | 103          | 51            | 154    |

The complete test for the first grade, which includes English and a Vernacular language, was passed by only one candidate; a teacher in the Government Female Normal School. The complete test for the second grade which also includes English and a Vernacular language, was passed by only one candidate, a pupil in the Government

c. Of these, one is a teacher.

d. Of these, two are teachers.

Female Normal School. All the other candidates who passed for the first grade brought up only English and therefore received imperfect certificates. Of the imperfect certificates for the second grade sixteen were obtained in English, two in Tamil, two in Malayalam, and one in English. It will be observed that the only schools which passed any pupils for the first grade were the Government Normal School, Davidson Street School and the Wesleyan Mission Mixed School.

The Doveton Girls' School, scarcely occupies the position in the list, which might be expected from the only higher class school for girls in this Presidency, and Mr. Fowler's report on his inspection of this school was not very favorable. It is to be regretted that the Northern Circars are wholly unrepresented in this list. Not a single girls' school under Hindu management appears in the list, the girls who attend such schools being usually withdrawn when they are about eleven years of age.

### CORRESPONDENCE.

#### PINK "BLACK-BOARDS."

TO THE EDITOR OF THE MADRAS JOURNAL OF EDUCATION.

SIR,—In your last number you have a paragraph about an American Doctor who objects to the time-immemorial practice of using black-boards, in schools, where, as a rule, the walls are washed white. The contrast between black and white, he says, is painful to the eye and though the weakening effect on it for a day is barely appreciable, yet the accumulated result after years of school-life, and daily exposure of the eyes to these high colours, is something to be noticed,—weak eyes, short sight, &c. He would substitute neutral-tinted boards and walls washed with neutral colours instead, such as blue, pink, green, &c., or brown, drab, &c. But what would be the effect of looking at, say, pink or blue, through three-fourths of the day? We know that if we look at red for a while, and then turn our eyes to white, we see an accidental image of the red object on the white, but tinted with bluish green, the colour complementary to red; or if we look at something yellow for a time, anything white seen immediately after, is tinged with blue; and so, in this case, after the eye has gazed through the day on pink walls, the nerves of sensation that have been exercised in the perception of this colour have their sensibility diminished, and are less susceptible to the influence of rays of this colour, than are those elements of sensation, that have not been weakened, to the influence of the complementary colour or to the other coloured rays that form the complement; so that when the eye is turned to white light, it receives very readily the impression of the other coloured rays to the exclusion of those forming pink, and sees the colour complementary to pink i.e., green. To a youth then returning from a school with pink walls, all white objects will be tinged with green, and though this effect will scarcely be perceptible at first, yet it will increase day by day, and he will gradually become incapable of perceiving pure white; thus after his years of school-life are over, he will probably be affected, not with weak eyes, but with colour-blindness, with a species of Daltonism for which a name will have to be found. We have all heard of the

young man who produced a picture with a bright red sea and green rocks, or of him who painted in a room a landscape of which the ground, trees, houses, and men were all painted blue, because as he said, he wished to assimilate the colour of his drawing to that of his furniture, which was red. And what if our youth, turned artist, should venture on giving us a moonlight scene? We should probably have our fleecy clouds converted into "banners of green moss" hanging in the sky and our silver moon itself looking like (to perpetrate a bad joke) a bit of "green cheese," a memorial of our childish fancies.

Such an effect of course could not be produced by white walls and black boards, for white objects reflect all the colours of the prism, and black none, but the contrast of these high colours will perhaps burn the eye. Neutral colours are so far good that they afford no strong contrasts, but the effect described above must be obviated; and this may perhaps be done by painting the boards with a neutral colour on which chalk will show, and the walls with the neutral colour that approaches nearest to the complement of the former.

Yours &c., &c.

Oculus.

CEDDAPA, December 2nd, 1878.

#### ARITHMETICAL PROBLEM.

SIR,—The annexed sum seems to have puzzled the Bombay Boys, as their Examiner tells us in the Memorandum that you published in the November Journal that only a tenth part of the Candidates for Matriculation answered it correctly. May I ask you to publish my solution of the problem?

I am, Sir,

Yours, &c.,

BENIGHTED BENJAMIN.

QUESTION.—A man near the sea-shore sees the flash of a gun fired from a vessel steaming directly towards him, and hears the report in 15 seconds. He then walks towards the ship at the rate of 3 miles an hour and sees another flash 5 minutes after the first, and immediately stops; the report follows in 10 minutes 5 seconds—find the rate of the ship, the velocity of sound being 1,200 ft. per second.

#### SOLUTION.

The distance of the Steamer from the spectator when the 1st gun is fired =  $1200 \times 15 = 18000$ .

The distance from the spectator when the 2nd gun is fired =  $1200 \times 10 \frac{1}{2} = 12600$ .

$\therefore$  the distance the vessel would have steamed between the two reports if the man had heard them both when standing in the same spot =  $18000 - 12600 = 5400$  feet.

But the man has walked  $3 \times 5280 \times \frac{1}{4} = 1320$  ft.

$\therefore$  the steamer in 5 minutes has passed over only  $5400 - 1320 = 4080$  ft.

$\therefore$  in one hour it passes over  $4080 \times 12 = 48960$  ft. or  $9 \frac{1}{4}$  miles.

—Answer.

## THE ARTS COLLEGES AND COLLEGIATE SCHOOLS.

*Taken from the Director's Report.*

Mr. Thompson, Principal of the Presidency College, went to England on leave on the 16th March 1877, and was succeeded by Mr. Porter. Mr. Bilderbeck, who had acted as Professor of History for nearly two years, was transferred in January to the Provincial School of Rajahmundry, and was succeeded first by Mr. Gopal Row, and afterwards by Mr. Ranganadha Moodelliar. There have also been some changes in the junior department.

The attendance, although not quite so high as it was last year, is nearly as large as is desirable, the average strength of the ten classes of which the institution is composed being above 36. The College has never distinguished itself so much in the University examinations as it has done this year. In the B. A. examination it stands far above all the other Colleges, and, although no first class was attained, the general excellence of the work done is attested by the fact that only five out of 35 candidates failed to pass. Seven of the graduates who passed this year took up Physical Science as their optional subject. In the F. A. Examination, the Presidency College stands below the Provincial College of Combaconum and the Central Institution of the Free Church of Scotland, but it has maintained its position in a year in which most Institutions have gone back. In the Matriculation examination, the number of successful candidates is unusually large, but it must be remembered that the standard was lower than usual.

The Laboratory was not quite finished at the end of the year.

Two annual prizes have been instituted during the year in connection with the Presidency College. One is a prize for English Composition, called the Arbuthnot prize, founded in honor of Sir Alexander Arbuthnot, K.C.S.I. The other, which is for History, has been instituted in honor of Mr. Gordon, who filled for many years the chair of History.

Mr. Porter makes the following interesting remarks on a subject regarding which there is a good deal of misapprehension:—

"The increasing number of B. A.'s is not regarded by some with unmixed pleasure. There are indeed not a few who regard it with utter disfavour and think it will end in disappointment to the young men themselves and as a consequence in political dissatisfaction. Meanwhile if we enquire of those who are most concerned whether they regard themselves as disappointed, we shall find the answer in this striking fact, that in three Colleges of this Presidency, omitting all the smaller Collegiate institutions, there are at the present moment 600 students reading for the higher examinations, a very marked increase on any previous year, and the confidence thus shown appears to be abundantly justified by the career of former graduates. It occurred to me while writing this report to bring the question of success in life to the test of fact by taking the University calendar and tracing the fortunes of the B. A.'s who graduated some years back. I will now state the results, which are not so complete as they might have been if I had had longer time, but which I believe are correct so far as they go. I begin with a set of students I happen to know particularly well, those who took their degrees the year I first acted in this College, now exactly ten years ago. Of the thirteen that passed in that year there are two I have been unable to trace in the short time at my disposal. Three became Vakeels, the rest entered Government Service; and every one now holds an office of responsibility. There is not one of the number with a salary below Rupees 200. In the following year, only five appear to have entered Government Service, the rest having become Vakeels or taken to other pursuits. Of these five there is only one with a salary below Rupees 150, and the average of their salaries is Rupees 200. In the next year, which is the last I shall mention, there were no fewer than 40 graduates.

Of these five are no longer living, four are unknown to me, eight are Vakeels, and the remaining 23 have fixed salaries mostly in the Government Service. Of these 23 about one-third have salaries of Rupees 200 and upwards, another third of Rupees 150 and upwards, and only two are below 100. The progress is of course less as the interval from the time of taking the degree is shorter. There is obviously nothing here for regret or discouragement. On the contrary, there is an average of success which speaks strongly of the intelligence and energy of the graduates of the University of Madras."

Mr. Porter was transferred, as already stated, from the Provincial College of Combaconum to the Presidency College in the middle of March 1877 and was succeeded by Mr. Gopal Row. Mr. Gopal Row acted as Inspector of Schools, 4th Division, from the 26th April to the 26th December, during which period Mr. C. Sundara Row, Mr. V. Srinivasaiyar, and Mr. N. Vaidianatha Aiyar acted as First, Second, and Third Assistants in the College Department. Some changes also took place in the School Department. Of these the most important was the abolition, owing to the crowded state of the institution, of one of the three divisions of the fourth class which was no longer required, a new division of this class having been formed in the Town School.

The B. A. classes are still rather small, containing 22 and 13 students each, while the F. A. classes contain respectively 74 and 91 pupils. The average strength of the school classes is 49. In the University examinations this institution occupied a very distinguished place, especially in the Matriculation examination. There were, as was the case generally this year, a good many failures in the F. A. examination, but those candidates who succeeded secured very good places, and a Combaconum student headed the list. Only one candidate failed in the B. A. examination, and not one was placed in the third class. Of the 200 students in the College, 153 belong to Tanjore, 20 to Madura, 9 to Coimbatore, 7 to Trichinopoly, 6 to Tinnevely, 4 to South Arcot, and 1 to North Arcot.

In my last report I endeavoured to show that a College was urgently needed in the Northern Circars. With the sanction of Government a Preparatory B. A. Class was opened in the Provincial School at Rajahmundry after the Christmas vacation, and Mr. Bilderbeck, Acting Professor of History in the Presidency College, was sent up to Rajahmundry as an Assistant to Mr. Metcalfe. As it was considered desirable that the inhabitants, and more especially the Zemindars of the Northern Districts, should be called on to contribute towards the expense of raising this school to the status of a College, the Collectors were requested to ascertain and report what sums were likely to be forthcoming. The result as yet has not been very encouraging. The donations paid or promised do not amount to Rupees 5,000. Some small annual subscriptions have been promised and two scholarships have been founded. In all other respects there seems every prospect of success. The number in the College Department has already risen from 18 to 51. In the Matriculation examination, 31 out of 36 boys passed. In the F. A. examination, only 6 passed out of 16, but the majority failed in English only. At the Comparative examination this school did very well, and passed 47 pupils, being a larger number than any other school. The majority of the pupils of the fifth and lower fourth classes passed a fairly creditable examination at Mr. Kershaw's inspection.

The financial condition of this institution is very satisfactory. The upper and middle departments taken together are now more than self-supporting.

Some important changes have been made in the constitution of the Central Institution of the Free Church of Scotland. The College which is "to be regarded as now representing more or less directly all the Churches of the Reformation, will be henceforth known as the Free Church Institution and Madras Christian College." "The Church Missionary Society



and the Wesleyan Methodist Missionary Society have agreed to give pecuniary help to the institution," and "the funds available are expected to secure as a minimum staff for the Collegiate Department five Professors, with two Assistant Professors, and such Fundits as may be from time to time required." The ideal aimed at is "that of a College separate from any school department and not dependent on any one Church or Missionary Society."

The College has sustained a great loss in the death of Mr. Ross, the Mathematical Professor, in whose memory an annual prize for Natural Philosophy has been founded. He has been succeeded by Mr. Michio Smith, B. Sc. Another new Professor, the Rev. R. N. Macdonald, has also entered on his duties; the Rev. G. M. R. has returned from England; and the services for a portion of his time of the Rev. G. Patterson, of the Wesleyan Mission, have been secured; while Mr. C. Subbarama Aiyar, M.A. has been appointed an additional Assistant Professor. Under these arrangements, Mr. Stevenson is no longer connected with the College as a Professor.

The tabular statement shows the great development of this institution, and especially of the College Department, during the year. In the Matriculation examination the results are surpassed only by the Provincial College of Combaconum, which however is very much ahead. In the F. A. examination the number of successful candidates is nearly as large as last year, notwithstanding the severity of the examination, but the proportion of failures was, as might be expected, much larger than usual. In the B. A. Examination the College has never done so well, and although it still stands far below the Presidency College, it has had the honor of passing the only man who took a first class this year.

Mr. Fowler examined the School Department in March. The result of his inspection in certain subjects and classes was very satisfactory, while in others there were some failures.

It will be seen that there has been a serious falling off in the attendance of the Doveton Protestant College, due probably in some measure to the opening of St. Andrew's School. In the University examinations the results cannot be regarded as satisfactory.

Mr. Fowler inspected the institution in March, and his report showed that much of the instruction imparted in the school was of a very unsound character. The attention of the Committee was drawn to this report. In reply they attributed the unsatisfactory state of the school classes to want of proper supervision, and stated that they proposed relieving the Principal of a part of his work in the College by permanently employing a native graduate to teach Mathematics. It was hoped that in this way Mr. Thom, or his successor, would be able to find time to supervise the lower classes. It is now known that Mr. Thom, who went to England upwards of a year ago, will not return to India. During his absence, Mr. Bindon has officiated as Principal.

The Seminary at Sullivan's Gardens is a small theological institution from which two or three young men generally matriculate every year and occasionally appear for the higher examinations. Mr. Fowler has not inspected the institution for three years, and it has been hitherto ranked as a higher-class school. The returns however show that the lowest class is a Matriculation class, and that the institution is in reality a small College. In 1874-75 two students matriculated from this seminary and were placed in the second class. In 1875-76 exactly the same result was produced. This year two pupils went up for the F. A. examination, one of whom was placed in the second class, and five for the Matriculation examination, of whom four passed, all in the second class. All the students of this institution learn Greek, and two also read Latin.

DEC. 1878.]

No inspection report on the S. P. G. High School, Tanjore, has been received for four years. The strength of the College classes is 7, 5, 42 and 32 respectively. The numbers on the rolls of each department during the last three years and the results of the University examinations are given in the tabular statement.

The institution, did exceedingly well in the Matriculation examination and fairly in the F. A. examination, but failed in the B. A. examination.

#### IV.—COLLEGIATE SCHOOLS.

The Provincial school of Rajahmundry has been transferred to the list of Colleges and the Sumasthanum High School, Vizianagram, has become a Collegiate School. Thus the number of Collegiate Schools remains unaltered. It will be seen from the following table that the attendance in these eight schools has on the whole increased, especially in the College Department, but that there has been some falling off in the Upper School Department. The number of pupils who matriculated has risen from 133 to 199, of whom 33 were placed in the first class against 14 last year. On the other hand, the number of First Arts men has fallen from 34 to 19, of whom however 6 passed in the first class against 3 last year.

The attendance in the Provincial School of Bellary again shows a very serious falling off. This school acquitted itself fairly in the University examinations. Five out of eight candidates passed the First Examination in Arts, all in the second class, and 14 out of 19 passed the Matriculation examination, all likewise in the second class. The upper fourth class is still in a deplorable state and stood last in the Comparative examination of Provincial and Zillah Schools. The work of the fifth and lower fourth classes was tested by a divisional Comparative examination instituted by Mr. Bradshaw. In this examination the fifth class did not occupy the position which it should have done, and the lower fourth class failed disgracefully. The third class was examined *vis à vis* by Mr. Fortey, who found that the 12 boys which it contained were quite unfit for the class into which they had been admitted. This class has been greatly injured by the recent institution of a third class in the neighbouring Municipal School, which was intended to serve as a feeder to the Provincial School, but which has now become a rival. Mr. Fortey remarks also that the Wardlaw Institution and the London Mission School "have for some time past been each a source of weakness to the other, as pupils have migrated from one to the other whenever their desire for promotion has not been gratified, and consequently there are in both schools pupils in higher classes than those for which they are fit." As both the Headmasters have now signed a set of rules which will put a stop to this irregular migration of pupils, I trust that the standard of the school classes will gradually rise. Mr. Thomas has succeeded Mr. Rauganadham Moodelliar as Acting Headmaster of this School.

There has been a very considerable increase in the attendance of the Provincial School of Calicut. This school did not do well in the First Arts examination. The First Arts class this year was a very poor one, and only two out of 13 candidates passed, one in the first class. In the Matriculation examination, 39 out of 55 pupils passed, 6 in the first class. As the lowest class in this school is the upper fourth, the whole of the middle department is tested by the Comparative examination of Provincial and Zillah Schools. Forty-seven pupils went up for this examination and the result was on the whole fairly satisfactory. There has again been no regular inspection of the school this year. Mr. Garthwhite states, however, that he examined the fifth class in October, and that it "did better than the corresponding class in former years, although much still remained to be done."

The attendance in the Provincial School of Mangalore has also increased, but the increase is mainly due to the formation of an additional section of

the lower fourth class. This school has been again unsuccessful in the First Arts examination, only four having passed out of seventeen. One of these was however placed in the first class. In the Matriculation examination 26 out of 47 passed, six being placed in the first class. This school did very well in the Comparative examination. The fifth and lower fourth classes were examined by Mr. Garthwaite in October, and the general result was satisfactory. Mr. Moss, the Headmaster, went on leave to England in November, and Mr. Burroughs succeeded him in the charge of the school.

#### *Noble High School, Masulipatam.*

There is a very satisfactory increase in the attendance of the Noble High School, Masulipatam. Of four pupils who went in for the First Arts examination, three passed, one in the first class; and sixteen out of nineteen passed the Matriculation examination, three being placed in the first class. Mr. Kershaw, who inspected the institution in August, made the following remarks:—

"The general results are not so satisfactory as I had expected them to be. The English in all its branches of Reading, Grammar, Spelling, Composition, and Translation wants more careful teaching on the part of the junior masters. Also the Arithmetic wants more careful and intelligent teaching. There was much slovenly workmanship shown me. Boys from the fifth class down to the lowest divided by 2 and 5 and such small numbers by long division.

"This school for the cleanliness, neatness, and convenience of its hall and class rooms, for the excellence and completeness of its furniture, apparatus, and appliances, and for the perfect order and discipline maintained throughout is a model institution. It is the best found school that I have seen in India. The copy writing is very fair indeed. I may add in conclusion that I noticed in the compound two Badminton Courts marked out and I found that the senior boys turn out every evening after school for a game, which they seem to enter into with considerable spirit; on certain evenings, Mr. Sharp and other European gentlemen of the station join them."

The staff is very weak for a school of this grade, but Mr. Sharp is endeavouring to strengthen it as opportunities occur. The F. A. class, which last year contained four students, this year contains nine, and Mr. Kershaw thinks that there is every probability of this important institution developing in course of time into a College.

#### *S. P. G. High School, Trichinopoly.*

The S. P. G. High School, Trichinopoly, has increased in numbers, although the upper school has somewhat fallen off. Mr. Gopal Rao inspected the institution in October and reported that the results of his examination, which was as usual confined to classes not tested by the University examinations, was generally fair, except in English and Mathematics. Twelve pupils went up for the F. A. examination and four passed, two in the first class. In the Matriculation examination this school surpassed every institution in this Presidency except the Provincial College of Combarcum. Out of 56 pupils, 51 passed, and 11 were placed in the first class.

St. Joseph's College, Negapatam, was not inspected. The table given above shows that the attendance has increased a little, and that the College Department is not quite so weak as it was. Of three pupils who went up for the F. A. examination, one passed in the first class, while in the Matriculation examination 14 out of 21 passed, one in the first class.

The attendance in the Coimbatore High School is nearly the same as it was, but the College Department now contains a Senior as well as a Junior F. A. class. Mr. Marden found this institution in a very satisfactory state when he visited

it in June, and 29 out of 31 pupils passed the Matriculation examination, five in the first class.

The decrease in the attendance of the Samasthanam High School, Vizianagram, is partly owing to the fact that the third class, which contained 66 boys, had been transferred to the Samasthanam High School, Vizianagram Branch School. A Preparatory First Arts class containing 8 students has now been opened. This institution passed a fairly creditable examination when it was inspected by Mr. Kershaw in June, and at the Matriculation examination ten out of eleven candidates passed.

### WESLEYAN A. V. INSTITUTION, ROYAPETTAH.

#### MATRICULATION CLASS.

##### *General English.*

I. (1.) In what three ways do we find Material nouns used in the plural? How is the singular of such nouns formed?

(2.) State, in a tabular form, the various classes of conjunctions, and give three examples of each.

II. Criticise:—(a) 'A house to let'; (b) 'the incident is worth recording'; (c) 'My father's and mother's side'; (d) 'four five pound notes'; (e) 'twenty pounds was the sum charged.'

III. Compose sentences using 'but' as a relative, 'through' as an adjective, 'what' as an adverb, 'at' as a verb, an interrogative clause which can be changed into a subordinate conditional clause.

IV. What is meant by 'the case absolute'? Introduce it in each of the following sentences:—

(a.) Francisco declined the office, and another was appointed.

(b.) The orator had finished one story, and his friend commenced another.

(c.) A general description of the country was given in a former letter, and I shall now entertain you with my adventures.

V. Write down one complex sentence for each of the following pairs of words:—

Doubt and trace; deprive and agree; concur and differ; insist and comply; accuse and acquit.

VI. Combine the simple sentences in each of the following into one complex sentence—1 and 2 by correlative conjunctions, and 3 by relatives.

(1.) This favorite was an extraordinary man. I must tell you all about him.

(2.) He was quick and eager in raising money. He was equally quick and eager in putting down revolt.

(3.) The company did not think of separating till midnight. The company were all pleased with each other. The company were all pleased with the gardener's fruits. The gardener produced fruits in great abundance.

VII. 1. Explain any ambiguity in:—(a) The old man went to see his son dressed as a colonel. (b) If the lad should leave his father, he would die.

2. Correct: (a) He wrote me letter on 2nd Proximo. (b) I hope you shall be so good enough as to be excused my absent. (c) I has business at my house; Master tells leave won't give. (d) That boys when I go home this morning stoned me. (e) Why you

came so lately? Now 3 o'clock: (f) Candid man avows his mistake and forgives: (g) They had no less than twelve children: (h) It is difficult to him to utter three sentences together: (i) Sir, our master not come; there is no any body to take the class.

VIII. Rewrite:—

(a). How richly have you and your father rewarded me for returning this rule!

(b). The reign of King Henry II. began well.

(c). He headed an army against the Normans with all the speed and energy of his father—

changing the italicised adverbs in (a) and (b) into adjectives, and the italicised nouns in (c) into adverbs.

(d). Not one drop of water was left in the well—

using the subject after the predicate.

(e). What an advantage your instructions would be to Francisco—

avoiding the exclamatory form.

Our complaint is that the London Press has passed judgment without examining the full scope and meaning of the Gagging Act—

expanding the italicised phrases into clauses.

IX. State the questions to which the words in brackets shall be answers:—

'He goes (on Sunday) (to the Church),

And sits (among his boys);

He hears (the parson) (pray and preach).'

X. 'Do not pretend ignorance,' said I to Ramasawmy, 'I know you are a thief: you have stolen my watch.' 'Do not alarm yourself, Sir,' replied the latter, 'I am not a thief, unless that title be attached to those who take from thieves. You will change your bad opinion of me when I shall have told you all about the loss of your property.'

Express the above in the indirect form of speech.

XI. Explain:—(a) Facts are stronger than fiction.

(b) His face is no index to his mind.

(c) I always like to take time by the forelock.

(d) That is neither here nor there.

(e) I have the whole mystery in the palm of my hand.

(f) He has run out of cash.

### FREE CHURCH INSTITUTION AND MADRAS CHRISTIAN COLLEGE.

CLASS II. COLLEGE.

TRIGONOMETRY—MAY 1878.

I. Find the general formula for determining the signs in the equations:—

$$\sin \frac{A}{2} + \cos \frac{A}{2} = \pm \sqrt{1 + \sin A}$$

$$\sin \frac{A}{2} - \cos \frac{A}{2} = \pm \sqrt{1 - \sin A}$$

and apply it to determine the value of  $\sin 210^\circ$  and  $\cos 210^\circ$  from the known value of  $\sin 420^\circ$

II. Find the value of  $\tan 18^\circ$  geometrically.

III. Give the general formula for obtaining the values of the cosines of consecutive integer multiples of  $A$  and employ it in determining the value of  $\cos 4A$ .

IV. If  $A + B + C = 90^\circ$  Show that

$$\tan A \tan B + \tan A \tan C + \tan B \tan C = 1$$

and  $\cot A + \cot B + \cot C = \cot A \cot B \cot C$ .

V. If  $\cot x = n \cot (a-x)$  then  $2x = a - \theta$  where  $\sin \theta$

$$= \frac{n-1}{n+1} \sin a$$

VI. If  $\cos A = \tan^2 B$  prove that  $\cos 2B = \tan^2 \frac{1}{2} A$ .

VII. If  $\sin A = \frac{1}{\sqrt{3}}$  and  $\cot B = 3$  Show that  $A + B = 45^\circ$

VIII. Prove that  $\frac{\tan A}{1 + \cot A} + \frac{\cot A}{1 + \tan A} = 2 \operatorname{cosec} 2A - 1$ .

IX. If  $\tan \theta = \sec a + \tan a$  prove that  $\theta = \frac{\pi}{4} + \frac{a}{2}$

X. Prove that the circumferences of circles vary as their radii and thence show that the angle subtended at the centre of a circle by an arc equal to the radius is constant.

### THE BISHOP COTTON SCHOOLS AND COLLEGE.

EUROPEAN HISTORY.

No. I.

I. What is meant by History?

A. Show the importance of Chronology and Geography in history.

II. How does the history of the West give political teaching?

III. Define the terms Aryan and Turanian.

A. How do the Indo-European Languages show their identity of origin?

B. Are there any peoples of Semitic race in Europe?

C. Are there any Turanian races in Europe?

IV. What is the so called "Northern Mediterranean?"

A. Draw a sketch map of Europe, putting in only the chief sea-ports.

B. Which are the chief Peninsulas of Europe?

V. Explain the expression, "the first wave of the Aryan migration in Central Europe."

VI. Write a brief summary of the history of Rome.

A. to the end of the 3rd Samnite War;

B. to the conquest of Carthage;

C. to the birth of C. Julius Caesar;

D. to the battle of Actium;

E. to the foundation of Constantinople.

VII. What was the Social War?

A. show its importance in Roman History.

VIII. Give the circumstances of

A. the division of the Roman Empire;

B. the fall of the Western Empire;

C. the fall of the Eastern Empire.

IX. Distinguish the Latin, Greek and Oriental provinces of the Roman Empire.

- X. Write a short life of C. Julius Caesar.  
 A. Compare him with his rival Pompey.  
 B. Were Brutus and Cassius right or wrong?  
 C. He was at once clement and cruel?  
 D. He has been called "the foremost man of all this world:" can you justify this language?  
 E. Give a detailed account of the events of B. C. 49.
- XI. Write a summary of Roman history from B. C. 27 to A. D. 14.
- XII. By what methods did Augustus make himself "practically master of Rome and of the whole Empire?"
- XIII. Write an account of Maccenas, C. Vipsanius Agrippa Arminius and Drusus.
- XIV. What are the chief events in the reigns of the Flavian Emperors?
- XV. Give an account of *Theodosius*, *Theoderic*, *Attila*, *Alaric Justinian* and *Ulpian*.
- XVI. Draw a sketch map of Europe showing the distribution of the Roman provinces among the Barbarian tribes, and the state of affairs generally in the 6th century A. D.
- XVII. Write a life of "the first Frankish king that became Roman Emperor, the first man of Teutonic blood that was called *Cæsar* and *Augustus*."
- XVIII. Give a genealogical table exhibiting as fully as you can the descendants of *PEPIN OF HERISTAL*.

#### PAPER ON SCOTT'S TALISMAN.\*

F.A. CLASS, 1879.

- I. What circumstances led Scott to become a novel writer? What name is given to the Series to which *The Talisman* belongs? In what other novel of the Series is the character of *Cœur de Lion* introduced?
- II. Relate in your own words the incident of the death of the Grand Master of the Templars. Is there any historical ground for this incident?
- III. Give the meaning of the following passages, and at the same time explain any peculiarity of idiom or phraseology:—
- By my father's beard, I think thou hast the right.
  - The pavilion in which these personages were, had, as became the time, as well as the warlike character of Richard, more of a warlike than a sumptuous or royal character.
  - He will change you his purposes as often as the trimmings of his doublet.
  - Here we be, three good Christians, and on yonder plain there pricks a band of some threescore of Saracens, what say you to charge them briskly?
  - Are you well advised that we came to expostulate on the part of the Council of the Monarchs and Princes of the Crusade against the risk of permitting an infidel and Eastern physician to tamper with a health so valuable as that of your master King Richard.

- The wind of prophecy hath chopped about and sits now in another corner.
  - "His Grace speaks to men of sucking poison" muttered another yeoman, as if he had said, "Go to swallow a gooseberry."
  - I am no blind Bayard to take a leap in the dark under the stroke of a pair of priestly spurs.
- IV. Compare the characters of *Cœur de Lion* and Philip of France.
- V. Account for the occurrence of so many obsolete words and phrases in this tale, and give sentences to illustrate Scott's use of the following words:—presentment; knave; tall; tyke; tide; skills; woodcraft; miscreant.

- VI. (a) Distinguish between heathenesse and heathenism; council and counsel; executioner and executor; temporary and temporal; sensible and sensuous; precipitousness and precipitancy.
- (b) Give the derivations of the following words:—Spices; generous; insane; missal; puny; morrice; assassin.
- VII. In what way does Scott apply the following apothegms.
- The overloaded appetite loathes even the honeycomb.
  - When the master-stag is struck down, the herd do not disperse upon his fall.
  - The master places the shepherd over the flock not for the shepherd's own sake, but for the sake of the sheep.
- Quote from the 'Talisman' three other apothegms and explain their application.

- VIII. Make notes on the following proper names:—  
 Tristram; Excalibar; Termagant; Ysoul Ben Yagoube; Stradiots; Engaddi; Charegites; Frangistan.
- IX. What was the professed object of the Crusades? What influence had they upon European civilization?

#### GRAMMAR, ANALYSIS AND COMPOSITION.

- I. Give adjectives from day, venture, son, knave.  
 Give Nouns from deserve, deceive, reside, feed.  
 Give verbs from good, fruit, gesture, friend.
- II. What peculiarities do you find in:—  
 (1) Twenty-thousand (2) many a man (3) children (4) widower.
- III. Distinguish between simple, compound, and complex sentences. Name the three kinds of clauses. Give examples.
- IV. Expand the underlined into clauses:—  
 1. I met him *crossing the street*.  
 2. *But for his laziness*, he would have passed.  
 3. I went to *see the Museum*.  
 4. *Being a foreigner*, he was no match for Pedro.
- V. Change the following from the active to the passive and vice versa:—  
 1. He overtook Francisco on his way homewards.  
 2. I do enough to satisfy myself, and my father too.  
 3. When I am found out for what I am, I can drive a stupid ass.  
 4. Learn your lessons well.

VI. Bring out the force of *for* in the following passages:—

1. There are trades enough *for* the honest dealer.
2. Clive changed his pen *for* the sword.
3. I should take you *for* an Englishman by your way of dealing.
4. He speaks Italian well *for* an Englishman.
5. *For* all his riches, he is not happy.

VII. Supply the ellipses in the following:—

1. I have father, enough and enough, when I see you and mother going on so well.
2. What can I want more.
3. I would rather be than seem your friend if I could:

VIII. Fill up the blanks in the following:—

1. I knew that he—come.
2. If he had been wise he—gone away.
3. He smiled—the child, and asked how his parents—.
4. If he—wise, he—go away.

IX. Correct the following:—

1. Since three days I am sick.
2. He was angry upon me.
3. He said that he is going to his country.
4. I am buying many beautiful furnitures for my new house.

X. Form one simple sentence from the following:—

- (a). Francisco was the son of a gardener.
- (b). His father was honest.
- (c). He loved to speak the truth.
- (d). He was born in Naples.

S. P. G. High School Trichinopoly.

TRIGONOMETRY\* AND EUCLID (BOOK XI).

I. Between what limits must  $A$  lie in order that  $\sin \frac{A}{2} - \cos \frac{A}{2}$  may be negative?

II. Find an expression for all the angles which have a given cosine.

III. Prove Geometrically that:—

$$(1) \tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$(2) \tan 22\frac{1}{2}^\circ = \sqrt{2} - 1.$$

$$(3) \sin 15^\circ = \frac{\sqrt{3}-1}{2\sqrt{2}}.$$

\* For Solutions see page 552.

IV. Define circular measure of an angle.

If  $\theta$  be the circular measure of a positive angle, less than a right angle, then  $\sin \theta$  is less than  $\theta$  and greater than  $\theta - \frac{\theta^3}{4}$ .

$$V. (1) \text{ Find } x \text{ from } \tan(x+\pi) \tan(x-\pi) = \frac{1-2\cos 2x}{1+2\cos 2x}.$$

$$(2) \text{ Eliminate } \theta \text{ and } \phi \text{ from the equations } a \sin^2 \theta + b \cos^2 \theta = m; b \sin^2 \phi + a \cos^2 \phi = n; \text{ and } a \tan \theta = b \tan \phi$$

$$VI. (1) \text{ Shew that } \frac{\cos 2x - \cos 2y}{\cos^2 x + \cos^2 y} \text{ lies between } \tan^2 y \text{ and } \cot^2 x.$$

$$(2) \text{ Find the co-efficient of } x^2 \text{ in } (x \sin \theta + 1)^n \times (x \cos \theta + 1)^n, \text{ given that } \sin \theta + \cos \theta = \frac{1}{2}.$$

$$(3) \text{ Shew that } \sqrt{2 + \sqrt{2 + \sqrt{2 + \dots \sqrt{2 + 2 \cos 2^\circ A}}}} = 2 \cos A.$$

VII. Define and prove what is called in Trigonometry the *Exponential Theorem*.

$$(1) \text{ Prove that } \text{Log}_a(1+x)^{\frac{1+x}{2}}(1-x)^{\frac{1-x}{2}} = \frac{x^2}{12} + \frac{x^4}{96} + \frac{x^6}{560} + \frac{x^8}{768} \&c.$$

$$(2) \text{ Find the value of } \left(1 + \frac{x^2}{2} + \frac{x^4}{4} \&c.\right)^n - \left(x + \frac{x^3}{3} + \frac{x^5}{5} \&c.\right)^2$$

(3) Given that the characteristic of  $\text{Log}_{10} a = m$  and that of  $\text{Log}_{10} b = n$ ; find the number of digits in  $a.b$ .

VIII. From the summit of a tower, whose height is 108 ft., the angles of depression of the top and bottom of a vertical column standing in the horizontal plane, are found to be  $30^\circ$  and  $60^\circ$  respectively. Find the height of the column.

IX. Find the area of a regular polygon of  $n$  sides described about a circle of radius  $r$ .

X. Name and define the five regular solids.

XI. If two planes cut one another, their common section is a straight line.

(a) Find the common section of three planes cutting one another.

XII. Draw a straight line perpendicular to a given plane, from a given point without it.

(a) A side of the base of a square pyramid is 200 ft.; and each edge is 150 ft. Find the altitude of the pyramid, and find also the inclination of each face to the base, given that  $\log 2 = .30103$ .

$$\text{L tan } 26^\circ 33' = 9.69368; \text{ and L tan } 26^\circ 31' = 9.69900.$$

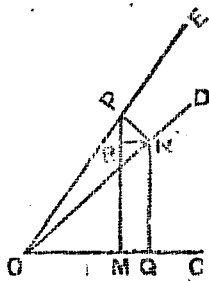
## TRIGONOMETRY.

(Answers to Questions given above.)

III. (1) Let the angle COD be denoted by A, and the angle DOE by B; then the angle COE will be denoted by A + B. In OE take any point P draw PM perpendicular to OC and PN perpendicular to OD; draw NR perpendicular to PM and NQ perpendicular to OC.

Then the angle NPK is the complement of PNR and is therefore equal to RNO, which is equal to NOC, that is A.

$$\text{Now } \tan(A + B) = \frac{PM}{OM} = \frac{PR + RM}{OQ - QM}$$



Dividing both the Numerator and Denominator by OQ, we have

$$\tan(A + B) = \frac{\frac{PR}{OQ} + \frac{RM}{OQ}}{1 - \frac{QM}{OQ}} = \frac{\frac{PR}{OQ} + \frac{NQ}{OQ}}{1 - \frac{RN}{PR} \frac{PR}{OQ}}$$

$$\text{Now } \frac{NQ}{OQ} = \tan A; \text{ also } \frac{RN}{PR} = \tan A.$$

And since the two triangles PRN and ONQ are similar,  $\frac{PR}{OQ} = \frac{PN}{ON} = \tan B$

$$\therefore \tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

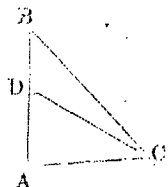
Similarly it can be proved that  $\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$  when (A + B) is in the second, third and fourth quadrants.

(2) Take a right-angled isosceles triangle ABC having the right angle at A.

Bisect the angle BCA by CD. Now the angle ACD = 22½°.

$$\frac{BC}{AC} = \frac{BD}{AD} \text{ (VI.3)} = \frac{\sqrt{2}AC}{AC} = \frac{BD}{AD} \text{ (for } BC^2 = 2AC^2)$$

$$\therefore BD = \sqrt{2}AD \therefore BD + AD \text{ i.e., } AB \text{ or } AC = (\sqrt{2} + 1)AD.$$



$$\therefore \frac{AD}{AC} = \frac{1}{\sqrt{2} + 1} = \frac{\sqrt{2} - 1}{(\sqrt{2} + 1)(\sqrt{2} - 1)} = \frac{\sqrt{2} - 1}{2 - 1} = \sqrt{2} - 1.$$

$$\text{But } \frac{AD}{AC} = \sin 22\frac{1}{2}^\circ.$$

$$\therefore \sin 22\frac{1}{2}^\circ = \sqrt{2} - 1.$$

(3.) Take an equilateral triangle ABC: Bisect the angle BAC by AD, and the angle BAD by AE, so that EAD = 15°.

$$\sin 15^\circ = \frac{ED}{AE} \text{ Now } \frac{AB}{AD} = \frac{BE}{ED} \text{ (VI.3)}$$

$$\therefore \frac{2BD}{\sqrt{3}BD} = \frac{BE}{ED} \text{ (for } AD^2 = 3BD^2)$$

$$\therefore \frac{2}{\sqrt{3}} = \frac{BE}{ED} \therefore \frac{2 + \sqrt{3}}{\sqrt{3}} = \frac{BE + ED}{ED}$$

$$= \frac{BD}{ED} \therefore 2 + \sqrt{3} = \frac{\sqrt{3}BD}{ED} = \frac{AD}{ED} \therefore \frac{AD}{ED} = 2 + \sqrt{3} \text{ Squaring}$$

$$\text{and adding 1 to both sides we have } \frac{AD^2 + ED^2}{ED^2} = \frac{AE^2}{ED^2} =$$

$$(2 + \sqrt{3})^2 + 1 = 7 + 1 + 4\sqrt{3} = 4(2 + \sqrt{3}) \therefore \frac{ED}{AE} = \frac{1}{2\sqrt{2} + \sqrt{3}}$$

$$= \frac{\sqrt{3} - 1}{2\sqrt{(2 + \sqrt{3})(\sqrt{3} - 1)}} = \frac{\sqrt{3} - 1}{2\sqrt{2(3 + \sqrt{3})(2 - \sqrt{3})}} = \frac{\sqrt{3} - 1}{2\sqrt{2}}$$

$$\therefore \sin 15^\circ = \frac{\sqrt{3} - 1}{2\sqrt{2}}$$

$$\text{V. (1) } \tan(a + x) \tan(a - x) = \frac{\sin(a + x) \sin(a - x)}{\cos(a + x) \cos(a - x)} =$$

$$\frac{\sin^2 a - \sin^2 x}{\cos^2 a - \sin^2 x} = \frac{1 - 2\cos 2a}{1 + 2\cos 2a} = \frac{1 - 2(1 - 2\sin^2 a)}{1 + 2(2\cos^2 a - 1)} = \frac{4\sin^2 a - 1}{4\cos^2 a - 1}$$

$$\therefore \frac{\sin^2 a - \sin^2 x}{\sin^2 a - \sin^2 x - \cos^2 a + \sin^2 x} = \frac{4\sin^2 a - 1}{4\sin^2 a - 4\cos^2 a} \text{ (adding}$$

$$\text{and subtracting) } \therefore \frac{1 - 2\sin^2 x}{2\cos^2 a - 1} = \frac{2}{4(2\cos^2 a - 1)}$$

$$\therefore 1 - 2\sin^2 x = \frac{1}{2} \therefore \cos 2x = \frac{1}{2} \therefore 2x = 2n\pi \pm \frac{\pi}{3} \therefore x = n\pi \pm \frac{\pi}{6}$$

$$(2.) a \sin^2 \theta + b \cos^2 \theta = m \therefore a - a \cos^2 \theta + b \cos^2 \theta = m.$$

$$\therefore \cos^2 \theta = \frac{m - a}{b - a}; \text{ again } a \sin^2 \theta + b \cos^2 \theta = m \therefore a \sin^2 \theta + b$$

$$- b \sin^2 \theta = m \therefore \sin^2 \theta = \frac{m - b}{a - b} \therefore \frac{\sin^2 \theta}{\cos^2 \theta} \text{ or } \tan^2 \theta = \frac{b - m}{m - a}.$$

$$\text{Similarly from the equation } b \sin^2 \theta + a \cos^2 \theta = n, \text{ we have}$$

$$\tan^2 \theta = \frac{a - n}{n - b} \therefore \tan \theta = \sqrt{\frac{b - m}{m - a}} \text{ and } \tan \theta = \sqrt{\frac{a - n}{n - b}}.$$

$$\text{Substituting in the equation } a \tan \theta = b \tan \phi, \text{ the values of } \tan \theta \text{ and } \tan \phi$$

$$\text{we have } a \sqrt{\frac{b - m}{m - a}} = b \sqrt{\frac{a - n}{n - b}}.$$

$$\text{VI. (1.) } \frac{\cos 2x - \cos 2\beta}{\cos 2x + \cos 2\beta} = \frac{2\sin(\beta + x)\sin(\beta - x)}{2\cos(\beta + x)\cos(\beta - x)}$$

$$= \tan(\beta + x)\tan(\beta - x) = \frac{\tan^2 \beta - \tan^2 x}{1 - \tan^2 \beta \tan^2 x}$$

Let this be equal to  $y$ , then

$$\tan^2 \beta - \tan^2 x = y - y \tan^2 \beta \tan^2 x \therefore \tan^2 x (y \tan^2 \beta - 1)$$

$$= y - \tan^2 \beta \therefore \tan^2 x = \frac{y - \tan^2 \beta}{y \tan^2 \beta - 1} = (y - \tan^2 \beta) \cdot \frac{1}{\tan^2 \beta (y - \frac{1}{\tan^2 \beta})}$$

Since  $\tan^2 x$  is positive, therefore  $(y - \tan^2 \beta) \cdot \frac{1}{\tan^2 \beta (y - \frac{1}{\tan^2 \beta})}$

is positive; and since  $\tan^2 \beta$  is also positive, therefore  $y$  cannot lie between  $\tan^2 \beta$  and  $\frac{1}{\tan^2 \beta}$ , i.e., between  $\tan^2 \beta$  and  $\cot^2 \beta$ .

(2.) The coefficient of  $x^2$  in  $(x \sin \theta + 1)^n \times (x \cos \theta + 1)^n$  is the coefficient of  $x^2$  in  $(1 + x \sin \theta)^n \times$  the coefficient of  $x^0$  in  $(1 + x \cos \theta)^n$  + the coefficient of  $x^2$  in  $(1 + x \cos \theta)^n \times$  the coefficient of  $x^0$  in  $(1 + x \sin \theta)^n$  + the coefficient of  $x$  in  $(1 + x \sin \theta)^n \times$  the coefficient of  $x$  in  $(1 + x \cos \theta)^n$ .

$$= \frac{n(n-1)}{2!} \sin^2 \theta \times 1 + \frac{n(n-1)}{2!} \cos^2 \theta \times 1 + n \sin \theta \times n \cos \theta$$

$$= \frac{n(n-1)}{2} (\sin^2 \theta + \cos^2 \theta) + n^2 \sin \theta \cos \theta$$

$$= \frac{n(n-1)}{2} + n^2 \sin \theta \cos \theta. \text{ But } \sin \theta \cos \theta = \frac{(\frac{1}{2})^2 - (\sin^2 \theta - \cos^2 \theta)}{2}$$

$$= -\frac{4}{9} \therefore \text{The coefficient of } x^2 \text{ in the expression} = \frac{n(n-1)}{2} - \frac{4n^2}{9}$$

$$= \frac{n^2 - 9n}{9}$$

$$(3) \quad 2\cos A = \sqrt{4\cos^2 A} = \sqrt{2(2\cos^2 A - 1) + 2} = \sqrt{2 + 2\cos 2A}$$

$$= \sqrt{2 + \sqrt{2 + 2\cos 2A}} = \sqrt{2 + \sqrt{2 + \sqrt{2 + 2\cos 2A}}} \&c. \&c.$$

$$= \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \dots \sqrt{2 + 2\cos 2A}}}}}$$

$$\text{VII. (1.) } \log_e (1+x)^{\frac{1+x}{2}} (1-x)^{\frac{1-x}{2}} = \log_e (1+x)^{\frac{1+x}{2}} +$$

$$\log (1-x)^{\frac{1-x}{2}} = \frac{1+x}{2} \log_e (1+x) + \frac{1-x}{2} \log_e (1-x)$$

$$= \frac{1+x}{2} \left( x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} \&c. \right) + \frac{1-x}{2} \left( -x - \frac{x^2}{2} - \frac{x^3}{3} - \frac{x^4}{4} - \dots \&c. \right)$$

$$= x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \&c. + x^2 - \frac{x^3}{2} + \frac{x^4}{3} - \frac{x^5}{4} \&c.$$

$$= x + 2 \left( \frac{x^3}{3} - \frac{x^4}{4} \right) + 2 \left( \frac{x^5}{5} - \frac{x^6}{6} \right) \dots$$

$$= x + 2 \left( \frac{x^3}{3} - \frac{x^4}{4} \right) + 2 \left( \frac{x^5}{5} - \frac{x^6}{6} \right) \dots$$

$$= \frac{x^2}{1 \cdot 2} + \frac{x^4}{3 \cdot 4} + \frac{x^6}{5 \cdot 6} + \dots \&c.$$

$$(2.) (1 + \frac{x^2}{12} + \frac{x^4}{14} \&c.)^2 - (x + \frac{x^3}{13} + \frac{x^5}{15} \&c.)^2$$

$$= (1 + x + \frac{x^2}{12} + \frac{x^3}{13} \&c.) (1 - x + \frac{x^2}{2} - \frac{x^3}{3} \&c.)$$

$$= (1 + x + \frac{x^2}{12} + \frac{x^3}{13} \&c.) \left\{ 1 + (-x) + \frac{(-x)(-x)}{2} + \right.$$

$$\left. \frac{(-x)(-x)(-x)}{3} \&c. \right\} = e^x \times e^{-x} = e^0 = 1. \text{ (Vide Todhunter's}$$

Plane Trigonometry, page 99.)

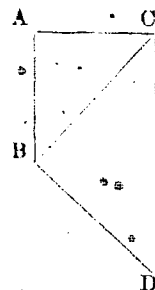
$$(3.) \log_a a = m + f(\text{a proper fraction}) \text{ and } \log_a b = n + f'$$

(a proper fraction)  $\therefore ab = 10^{m+n} + n + f + f'$ . Now if  $f + f'$  be either equal to or greater than unity the number of digits in  $ab$  is equal to  $m + n + 1 + 1 = m + n + 2$ . If  $f + f'$  be not equal to unity, the number of digits in  $ab = m + n + 1$ .

VIII. Let AB be the tower and CD the column; let the angle BCD be  $60^\circ$  and the angle BDC  $30^\circ$ . Then the angle ACB is  $30^\circ$  (for it is equal to  $90^\circ - \text{BCD} = 90^\circ - 60^\circ$ ). Therefore also the angle AEC is  $60^\circ$ . Now by producing BA to E such that AE may be equal to AB and joining CE, it will be seen that BC is double of AB. Similarly it will be seen that CD is double of BC. Hence  $CD = 4AB = 4 \times 108 = 432$  feet.

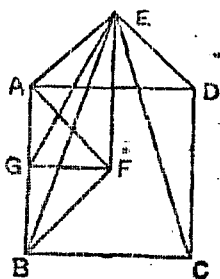
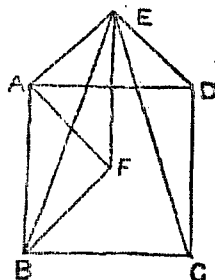
XI. Let two planes cut one another; then their common section is a straight line. (Geometry XI. 3).

If a third plane passes through the common section, the common section of these three planes is the same straight line. But if the third plane cuts the common section, the common section of these three planes is a point. Therefore the common section of three planes is either a point or a straight line.



XII. (a.) (1.) Let ABCD be the base of the square pyramid, having AB equal to 200 feet and AE, one of the edges equal to 150 feet. Let EF be the altitude. Join AF and BF. Then by taking the two triangles EFA and EFB, we can prove that  $AF = BF = AB \cdot \frac{1}{\sqrt{2}} \therefore AF = \frac{200}{\sqrt{2}}$  feet EF  $= \sqrt{AE^2 - AF^2} = \sqrt{22500 - 20000} = 50$  feet.

(ii.) From E draw EG perpendicular to AB, the common section of the planes ABE and ABCD. AG = GB (for AE = BE) and AF = BF  $\therefore$  GF is perpendicular to AB.



$$\tan EGF = \frac{50}{100} = \frac{1}{2} \text{ (for } GF = \frac{1}{2} AB)$$

$$\therefore \text{Ltan } EGF = 10 - \log 2 = 9.79887.$$

For a difference of .00032 there is a difference of 1'  $\therefore$  for a difference of .09997 (above 9.69900) there will be a difference of  $\frac{9997}{32} = 5^\circ - 12' - 24\frac{3}{4}''$

$\therefore$  the angle EGF which is the angle of inclination  $= 26^\circ, 34' + 5^\circ, 12', 24\frac{3}{4}'' = 31^\circ, 46', 24\frac{3}{4}''$ .

### THE RECENT CHANGES ON THE MAP OF EUROPE.

The portions of territory ceded to Russia consist of those districts of Bessarabia, which lie north of the Kilia outlet of the Lower Danube and east of the Pruth; and a corner of Armenia in Asiatic Turkey, including the seaport of Batoum, and the fortresses of Kars and Ardahan. The Dobrudscha, or strip of land enclosed between the bend of the Lower Danube, the Black Sea, and a line drawn from Silistia to Mangalia, south of Trajan's Wall, has been given to Roumania. The accession of new territory to Servia, is to the south of its former boundary on the side towards Bulgaria; and the important fortified city of Nish, with the border towns of Pirot and Vranja, has passed under Servian rule. The little highland principality of Montenegro is enlarged by the addition, marked "M," of a strip around three sides of its limited domain, with a very small bit of the Adriatic coast, being the town and port of Antivari. The newly-constituted semi-independent State of Bulgaria, between the Danube and the Balkans, possessing an area of 22,000 square miles, and including Sofia, to the west, and Varna, to the east, with all the battle-fields of the late campaign. To the south of it lies a considerable province, henceforth to be styled East Roumelia, inhabited by a mixed Bulgarian and Turkish population, which has suffered far more than any other country from the

late horrid massacres and other effects of misrule or inhuman strife between hostile races and religions. This province is now to be placed under a reformed administration, with guarantees for liberty and equity, prescribed by the European Congress. We can but hope that the lot of all its inhabitants, both Christian and Mohammedan, will be rendered tolerable; and that they will be compelled to refrain from and destroying outraging each other. The condition of Bosnia and Herzegovina, the most westerly provinces of the Turkish Empire, was quite as bad, or even worse, previous to the revolt and massacres of 1876, inasmuch as they were greatly impoverished by a vicious fiscal system, and excluded from foreign commerce. They are now to be occupied and administered by the Austrian Empire. The total amount of the territories lost by the Sultan under the Treaty of Berlin is 71,500 square miles, with an aggregate population of three millions and a half.

Thus it will be seen that the Berlin Congress has not merely sanctioned but authoritatively devolved upon Austria the indefinite occupation and internal administration of Herzegovina and Bosnia. The Turks have opposed some resistance to this determination, but it will be carried into effect, with a predominant authority against which no protest of the Porte will become effectual. Servia and Roumania have been made independent of the Sublime Porte, and receive the necessary rectifications of their respective frontiers. The Bessarabian difficulty has been virtually disposed of. Antivari has been conferred upon Montenegro as a port, besides some extension of territory. The navigation of the mouths of the Danube will be free, as hitherto. England is pledged by the Berlin treaty to protect by military force the Asiatic Frontiers of the Sultan's possessions against any future aggression by Russia, and to prevent all future extension of the limits assigned to Russia by the Congress.

With a view to this Turkey cedes to England the occupation and administration of the Island of Cyprus so long as Russia retains the territory ceded to her by the Sultan and sanctioned by the Congress. The Ottoman Empire on the other side of the Bosphorus, in fact, is guaranteed to the Port by her Majesty's Government, and the cession of Cyprus is assented to as a means to the end.—*Illustrated London News*.

### ON THE ENGLISH POSSESSIVE CASE.

Paper Read at the Teacher's Conference, Jan. 9th.

By Rev. A. J. D. D'ORSEY, B.D.

(Lecturer at King's College, London)

The Rev. A. J. D. D'Orsey said that the subject which he wished to submit to the Conference was of a more minute and technical character than the graver matters to which its attention had been recently called. He ventured, however, to justify this selection in the words of Schlegel,—"The care of the national language I consider at all times a sacred trust, and a most important privilege of the higher orders of society. Every man of education should make it the object of his unceasing concern to preserve his language pure and entire, to speak it, so far as is in his power, in all its beauty and



perfection." Admitting the truth of this, no class of the community possessed greater power to preserve our language in its purity than the instructors of our early years. It was then that we acquired not only the pronunciation and accent, but the words and idioms which remained with us for life. Many teachers felt this responsibility, and did their best to correct erroneous tendencies; but not a few seemed to relinquish the task in despair, and even in their own language to conform to vulgar rather than classical usage. The result was that when their pupils became men, and entered upon life as writers and speakers, printers and publishers, the inaccuracies which had been left uncorrected at school became incorporated in our books, our newspapers, our sermons, our speeches, our letters, and even our ordinary conversation. He might quote in proof such expressions as "very pleased" for "much pleased," "oh either side of the door" for "on each side," "I shall have much pleasure in accepting your invitation" instead of "I have much pleasure, etc., etc.; the insertion of the adverb between *to* and the verb, as "he intended to entirely change the scene," and many other instances which he had no time to specify. His purpose, at present, was to call attention to special forms of error in connection with the English possessive case.

I have no intention (continued Mr. D'Orsey) of entering into a philological account of the origin of the English genitive. There is no one in the present audience who requires to be told that the possessive form represented a contraction for *es* or *is*, *man's* being in English what *mannes* was in German, and that, strictly speaking, there was no authority but custom for using an apostrophe after the *s* in such words as *boys*. The explanation sometimes given, and justified by more than one example, that "John's book" was a contraction for "John his book," required no comment. The faults generally committed were the following—(1) transposing the place of the apostrophe, e.g., "a large boy's school," and "I wish for a two hour's visit"; (2) supposing that the nominative plural required an apostrophe, "well aired beds," "baths to let," etc., an error found in the writings of our best authors, as for instance, "the Forbes's were present"; thirdly and chiefly, the suppression of the second *s* in cases like "Dickens's works," "St. Thomas's Church," "St. James's Square," etc. The fault seems due to the teaching of most of our school grammars in which an exception is made to take the place of a rule. Lennie says nothing whatever about this perplexing case, and Morell, p. 29, says, "Where the singular ends in *es*, sounded as a distinct syllable, the apostrophe is only used; as 'Socrates's wife'; but Addison expressly contradicts this (*Spectator*, No. 23): 'Socrates's behaviour'; 'His Holiness's generosity'; and in No. 47, 'Mr. Hobbs's reflections.' Macaulay, in such cases, invariably uses the second *s*, thus, 'creditable to Charles's temper'; 'a splendid appearance in St. James's Park'; 'Fowler at St. Giles's.' Our modern practice seems strangely inconsistent. In the *Times* of yesterday, I find several advertisements correctly printed, such as "Evans's," and in p. 12 I find "J. and P. Coats's Sewing Cottons," "Pears's Transparent Soap." In the same journal you will frequently find one leading article with "Mr. Lewis's appeal" correctly given, and in the next you read of "M. Thiers's conduct." Even the *Academy*, *Chambers's Journal*, and Collins's publications constantly err against the correct principle. There are many other

cases which require special attention, such as "Owens-College," which being founded by a gentleman of that name requires no apostrophe; the "*Times* correspondent," where the word "*Times*," being used as a species of adjective, ought rather not to be in the possessive case, or, if regarded as a noun, should have a second *s*.

In conclusion, I beg to propose what seems to me a simple principle that, wherever the second syllable is sounded, the second *s* should be added.—*The Journal of Education*.

### THE DIGNITY OF LABOUR.

THE best education and the highest culture, in a rational state of Society, does not seem inconsistent with a life of hard work. It is not a figure of speech but a plain fact, that a man is educated by his trade, or daily calling. Indirectly, labour ministers to the wise man intellectual, moral, and spiritual instruction, just as it gives him directly his daily bread. Under its legitimate influence, the frame acquires its due proportions and proper strength. To speak more particularly, the work of a farmer, for example, is a school of mental discipline. He must watch the elements; must understand the nature of the soil he tills, the character and habits of the plants he rears, the character and disposition of each animal that serves him as a living instrument. Each day makes large claims on him for knowledge, and sound judgment. He is to apply good sense to the soil. Now, these demands tend to foster the habit of observing and judging justly; to increase thought, and elevate the man. The same may be said of almost all trades. The sailor must watch the elements, and have all his knowledge and faculties at command, for his life often depends on having "the right thought at the right time." Judgment and decision are thus called forth. The education men derive from their trade is so striking, that craftsmen can express almost any truth, be it never so deep and high, in the technical terms of the "shop." The humblest business may thus develop the noblest power of thinking. So a trade may be to the man, in some measure, what the school and the college are to the scholar. The wise man learns more from his corn and cattle, than the stupid pedant from all the folios of the Vatican. The habit of thinking, thus acquired, is of more value than the greatest number of thoughts learned by rote, and labelled for use.

But an objection may readily be brought to this view, and it may be asked, why then are not the farmers, as a class, so well instructed as the class of lawyers? Certainly there may be found farmers who are most highly educated. Men of but little acquaintance with books, yet men of thought, observation, and sound judgment. Scholars are ashamed before them when they meet, and blush at the homely wisdom, the acute analysis, the depth of insight, and breadth of view, displayed by labourers in blue frocks. But these cases are exceptions. These men were geniuses of no mean order, and would be great under any circumstances. It must be admitted, that, as a general rule, the man who works is not so well educated as the lawyer. But the difference between them rises not so much from any difference in the two callings, as from this circumstance that the lawyer enters his profession with a large fund of knowledge, and the habits of intellectual discipline, which the farmer has not. He

therefore has the advantage so long as he lives. If two young men, of the same age and equal capacity, were to receive the same education, till they were twenty years old, both taking proper physical exercise at the same time, and one of them should then spend three years in learning the science of the law, the other in the science of the farm, and then both should enter the full practice of their two callings, each having access to books if he wished for them, and educated men and women, can any one doubt that the farmer, at the age of forty, would be the better educated man of the two? The trade teaches as much as the profession, and it is as well known that almost every farmer has as much time for general reading as the lawyer, and better opportunity for thought, since he can think of what he will when at his work, while the lawyer's work demands his thought all the time he is in it. The farmer would probably have the more thoughts; the lawyer the more elegant words. If there is any employment which degrades the man who is *always* engaged in it, cannot many bear the burthen each a short time—and so no one be crushed to the ground?

Morality, likewise, is taught by a trade. The man must have dealings with his fellows. The afflicted call for his sympathy; the oppressed for his aid. Vice solicits his rebuke, and virtue claims his commendation. If he buys and sells, he is presented with opportunities to defraud. He may conceal a fault in his work, and thus deceive his employer. So an appeal is continually made to his sense of right. If faithful, he learns justice. It is only by this exposure to temptation, that virtue can be acquired. It is in the water that men learn to swim. Still more, a man does not toil for himself alone, but for those dearest to his heart; this for his father; that for his child; and there are those who out of the small pittance of their daily earnings, contribute to support the needy, print Bibles for the ignorant, and preach the Gospel to the poor. Here the meanest work becomes heroism. The man who toils for a principle, ennobles himself by the act.—PARKER.

### THE RELATION OF GROWTH TO EDUCATION.

(A Lecture delivered by J. M. Fortherrgill M.D., M.R.C.P. at a Meeting of the London Association of Schoolmistresses.)

LADIES,—The subject which I have the honour to bring before your attention this evening, is one of truly great importance. Human brains are the most highly elaborated product of a country with which we are acquainted. They are indeed the most valuable form of raw material; and no pains are too great for their proper working out and development to their utmost potential expansion. The importance of the proper culture of human brains is now being fully and sufficiently recognized; not only in the higher, but in the humbler forms of education—alike in the highest educational institutions and in the elementary schools governed by the School Boards. The schoolmaster is now abroad and in good earnest; and the physiologist and the medical man are willing, indeed wishful, to further his efforts to the very best of their ability. It is in the power of the latter, I firmly believe, to materially aid the teacher in his efforts to cultivate human brains. There are many matters in con-

nection with education which bring it under the notice of the physiologist. One of these is growth: and this is the subject I wish to engage your attention upon this evening.

It is during the period of active growth that education must be carried on. By this I mean that primary and fundamental training which must precede the higher personal self-education of the individual, which extends throughout life; or—at any rate—ought to do so, and in all self-respecting persons does go on continuously. But during this earlier period there is much to be done, as well as the cultivation of the mental powers—there is the preservation and development of the physique, a matter of great importance. For if a brain, no matter how powerful or how able, is yoked with a feeble frame, or a delicate organization, its capacity is lessened and its energy limited. In order that a brain may work up to its highest potential capacity, it must be united to a strong frame and a hardy, enduring body.

We see, then, that the education of the mind and the development of the physique go hand in hand—that is, as regards the race generally. We know that there are instances where a mighty mind is found associated with a feeble organization, and Macaulay, in his description of the battle of Neerwinden, brings this out in a striking passage. He is speaking of Luxemburg, the French commander, and William, Prince of Orange and King of England, and writes: "At Laufen two poor sickly beings, who, in a rude state of society, would have been regarded as too puny to bear any part in combats, were the souls of two great armies. In some heathen countries they would have been exposed while infants. In Christendom they would, six hundred years earlier, have been sent to some quiet cloister. But their lot had fallen on a time when men had discovered that the strength of the muscles is far inferior in value to the strength of the mind. It is probable that, among the hundred and twenty thousand soldiers who were marshalled round Neerwinden under all the standards of Western Europe, the two feeblest in body were the hunchbacked dwarf who urged forward the fiery onset of France, and the asthmatic skeleton who covered the slow retreat of England." It was, however, not in consequence of their physical weakness—but in spite of it, that these two commanders occupied their conspicuous positions. In some persons the brain power is so great, so tremendously preponderating, that it seems indifferent to a puny body; these are, however, but exceptions, not the rule.

Ordinary beings of average powers form the great mass of humanity, the bulk of those who have to be trained and taught; and it is of average humanity I shall speak to-night, in addressing you on the subject chosen. These exceptions go to illustrate more vividly the importance, in modern times, of the brain as compared to the thews and sinews. The battles of life, alike in peace and war, are fought by brains now: and this will be even more the case in the future. How, then, to make the most of each and every brain, is the problem which a large and earnest portion of society have set before themselves to solve! Nor is the interest in this question confined to those who are specially engaged in teaching. The physiologist finds the subject come within his province—the physician has it brought before him in the cases of illness directly brought about by over-taxation of the system from educational efforts. At the time

that the tiny child is conquering the difficulties of the alphabet, its tissues are growing rapidly; and its nutritive powers have to meet the demands of its tissues, bones, and muscles, as well as those of the brain. It has to grow, as well as to furnish nutritive material to the expanding brain, and there is also the increase in bulk of the brain to be met—as well as the wear and tear of functional activity. When the brain is insufficiently supplied with blood, its power is cut down and limited. The brain requires nutritive material as much as any other organ, for its active functional manifestations. It is as dependent on the body commissariat as the muscles of the legs; consequently, an essential point in all education of the young, is to see that the nutrition is kept up by food—suitable alike in quantity and in quality. If this be not attended to, growth and education will be alike retarded. The child must have nutritive material alike for the needs of each. There is a certain antagonism in these several demands; and often one of the processes has to give way to the other. Every one must have noticed the contrast betwixt the sturdy, stolid, muscular peasant child, and the slight, precocious, active-minded child seen in large towns: but the potentialities of the little peasant are far greater than those of the town-reared child—the one is eating his cake, the other is keeping his. When the frame of the peasant has at length reached its full expansion, then the mental powers commence to actively develop, and often ripen rapidly. But in the present state of things it is simply impossible to wait till the completion of the growth before the process of education is actively instituted; before the growth is completed, the start in life must usually be made. We may be quite conscious that the finest product may be attained by making the education wait upon the growth; and only so much educational work insisted upon as will keep the individual out of mischief, but this can only be done in the case of favoured individuals; it is simply impracticable for the great majority: consequently the problem before us is one of expediency—how to do the best we may under existing circumstances.

I remember well a boy, the only child of a friend of mine in the country, who in his early years was delicate, was often actually ill, and at best was never very robust, yet he came of a robust stock. His father and I had many a long earnest talk over him: we agreed not to push him, not to encourage him to work for prizes; but just to let him go on quietly. Gradually, as he waxed, he outgrew his delicacy, became stronger; his periods of actual illness became less frequent, and of shorter duration: and now when he has ceased to grow—having attained a height of about six feet—he is becoming spontaneously mentally active, and is capable of a great amount of sustained mental toil. His physique has been thus secured, and there seems every probability that his intellectual capacity will be developed by this plan of education. Had he been pushed on, there is much room for believing that he would have been converted into a feeble being: and it may be strongly doubted if this physical feebleness would have been compensated by a corresponding intellectual development.

This antagonism betwixt growth and education probably not unfrequently results in arrested growth, as was the case with the late M. Thiers, whose massive head and colossal intellect were a perfect contrast to his diminutive body.

It may be well at this point to consider the nature of growth in the human infant. It was ascertained by M. Quetelet in his famous researches on Man, that growth in boys and girls varies. Girls grow comparatively faster than boys; attaining their full stature a couple of years before the time that boys attain their extreme growth. At fourteen or fifteen the upward line of growth in girls turns towards the level of maximum stature; while that of boys goes on for two more years, before it assumes the horizontal line. This is an important matter, as will be seen afterwards: for inability to attend school from rapid growth is much more common, in my experience at least, in girls than boys. Then, too, he shows that growth is more rapid, and the full stature more readily attained in cities than in the country. And this, again, is very important, as it explains how town children are more liable to temporary interruptions of their studies, from periods of rapid growth, than are the more slowly waxing children of the country. This condition of more rapid growth in town children, is a subject which ought to attract the keen attention of those who are engaged in the superintendence of the education of children. It is obvious that with children in educational institutions in towns, the dietary must be more liberal than is necessary in the country. The demands of the growing tissues require a large quantity of food; and when to this demand is added that of the brain, which is kept in a state of high functional activity, it is clear that a condition of health can only be maintained by a liberal supply of digestible food, and an active assimilation. This holds good of growing children alike in towns and in the country; but more especially of towns.

Not only is a sufficiency of food a matter of the highest importance, but a sufficient supply of oxygen is most desirable for proper growth. A good supply of fresh air, that is, air frequently renewed, even if not always pure air, is very desirable. Compare the mill hands of manufacturing towns with the country population around such towns, and a strong contrast is readily observed—the countryman is bigger and heavier than the little active mill hand: yet both have much the same food, probably, if anything, the mill population have the best of it; both inhabit much the same class of house, and sleep under conditions closely alike: but the countrymen is out all day, as a rule, in the open air: the mill hand is engaged in the impure atmosphere of the mill for hours daily. The storage of oxygen at night is much the same in each case, but the accumulation of oxygen in the tissues during the day is widely different. The mill hand has to draw upon the scanty store gathered during the night, to meet his daily wants; the countryman during the day adds to his nocturnal savings. A sufficient supply of oxygen, then, is essential to growth: to say nothing of the imperative necessity for fresh air in schoolrooms to enable the pupils to keep their brains actively at work. In old-fashioned schoolrooms this matter of ventilation was utterly neglected, in most instances; and the rod was resorted to to maintain a condition of wakefulness: and children were beaten for a lack of industry and for a blameworthy somnolence—when in reality they were labouring under partial carbonic acid poisoning.

It is needless to insist upon a sufficiency of sleep for our juvenile toilers; that is of primary importance; and long hours of rest are requisite for the brain which has for many hours to maintain a con-

dition of high functional activity: for it is during the hours of rest that the organ itself is nourished and grows.

Now it may be well to consider briefly the physical conditions of brain activity. The brain, though perched at the top of the organism, is more richly supplied with blood than is any other part of the body, and this high vascularity enables it to work as it does. In order to discuss this question properly, I must run the risk of being charged with materialism by some, perhaps; but they will soon perceive that thinking must necessitate physical changes in the brain, and it is only with this aspect of the subject we are at present concerned. The recognition of a colour or sound; the evolution of a thought; or the action of a motor centre in setting a group of muscles into action: are all accompanied by a molecular change in that portion of the brain which is connected with each act. When the brain is active more blood is passing through it. The act of will setting the brain hard at work is accompanied by a broader and swifter blood current through the contents of the skull. When the brain is at rest it is comparatively bloodless. These are not mere speculative statements; but rest on a well assured basis. I am anxious to impress upon you the close relations existing betwixt the blood supply of the brain and conditions of activity in that organ. When an animal is asleep, its brain becomes pale and exsanguine, and the flow of blood through it is markedly lessened. During sleep there is psychical quiescence, except an occasional dream; the organ is no longer functionally active, and its blood supply is merely sufficient to carry on the nutrition of the brain tissues. A slow and restricted supply of arterial blood is equal to the demands of tissue repair and tissue growth but when the animal awakens, and the brain begins once more to assume an active condition, it becomes rosier, it swells in size, it is more turgid with its increased vascularity; the brain cells, awakening to active life, attract blood to themselves in a richer and more liberal supply, furnished by a broader and swifter current. When the brain becomes engaged in very active thought—so active that the individual is conscious of mental effort, the vascularity of the brain is still further increased. It is impossible to produce the evidence for this here. It is not an individual hypofthesis of my own, but a mere expression of what is accepted, and based on the experiments and observations of others.

This rich blood supply enables the brain to put forth its highest powers. No matter how able and gifted a brain may be, it rests upon its blood supply for its functional activity. Reduce that blood supply, and you directly limit its capacity; cut it off almost entirely, and unconsciousness is the result. Certain agents known as stimulants increase the blood supply of the brain, and produce mental activity or excitement. An effort of will, spontaneous, or aroused by extrinsic causes, as by encouragement, reproach, or the prospect of punishment—while increasing brain activity, at the same time enlarges the vascular currents: attention is accompanied by corresponding physical changes and alteration in the calibre of the brain blood-vessels.

Such, then, are the relations of brain activity to brain vascularity. It is necessary, also, that the blood should be of a proper quality, whether for tissue repair or functional activity of an organ. If the

blood be deficient in nitrogenized elements, it is not nearly so stimulant. When nitrogenized material is present in excess, the brain is excited and irritable. The restlessness of the carnivora, as compared to the quietude of herbivorous creatures, is well known. There is something in the food, as well as in the inherited disposition. The plan of reducing stubborn children to obedience by a regimen of bread and water, was a favourite one in olden times. On the other hand, M. Metz, of Metzray, famous for his institution for reclaiming boys, found that with many of the weaker-willed boys a liberal dietary, including some wine, was necessary and requisite to enable them to maintain good resolutions,—which they were willing enough to make, but to which they were too irresolute to adhere. It is necessary, then, that the blood supply of a brain should be sufficient alike in quality as in quantity, for the proper manifestation of cerebral activity.

Having now recognised these existing relations betwixt the blood supply of the brain and an active condition of it, intellectual or material; let us review the physical conditions of active growth.

Growth involves not only changes in the long bones and in the segments of the vertebral columns, but of the muscles, connected therewith, along with corresponding elongation of blood-vessels and nerve tracts. The growth of the long bones is achieved by means of comparatively loose ends, called epiphyses; the shafts of the bones increase in thickness by a lateral growth, but their length is added to by changes carried on at each end. When a period of active growth is instituted, these ends of the long bones become more highly vascular, and turgid with blood. The nutritive changes going on, demand a more liberal supply of material; and this is furnished by a larger blood current. The blood must bring to the growing tissues every particle of that material out of which those tissues are formed. Not only, then, are these ends of the bones waxing, enlarging, and, in consequence thereof, attracting to themselves an unusual quantity of blood; but a corresponding activity is going on in the other tissues connected therewith. The cartilages, the muscles, and tendons connected with the bones are keeping pace with these osseous changes; and crying for more blood, often in plaintive, but inarticulate wailings of pain—"growing pains," as they are termed—and, as such, familiar to all who have had much experience of children. There is a general and universal demand upon the blood and assimilative processes of the child. Its nerve energy is almost entirely drafted away for the exigences of growth at the various parts, the blood current is now actively flowing in other directions than the brain: and the mental powers are enfeebled accordingly. The blood supply to the brain in its elevated position is insufficient for great functional activity; and lassitude is one outcome, intellectual enfeeblement another. Let me relate a case in point.

A friend of mine had a little page-boy, a bright, sharp, wide-awake little cockney, who had all his wits about him. In a week or two he became listless, and indolent, and his master complained he was growing lazy and indifferent. Calling upon him one day, I found him wrathful at the boy's indolence. I represented to him that the boy was growing rapidly; the change to a more liberal dietary and surroundings more generally favourable, had set up a

period of active growth. My friend, one of our leading physiologists, at once appreciated the soundness of the explanation: and rang the bell for his housekeeper. "Is Charles growing fast at present?" he asked. "Growing fast, sir," was the reply; "why! we can't keep him in clothes!" This was perfectly satisfactory; and Charles's shortcomings were at once referred to their true cause—not to mental inattention, a moral blameworthiness; but to physical conditions not involving moral responsibility; and for which censure was not the proper corrective. After a brief period the boy regained his wanted sharpness and recovered his usual activity. During the time that there was a general demand upon his blood supply for the needs of his tissue changes, his brain was comparatively starved; and no effort of will could endow the boy with the desired cerebral activity, either motor or intellectual. This is but one instance out of many. But let us suppose, that the true cause of this boy's shortcomings had not been recognised; how much might he not have suffered in underserved chiding. What is the lot of growing children ordinarily? Unless they are obviously and unmistakably ill, so ill that the most obtuse intellect can not avoid recognising their condition—usually neither their parents nor their teachers awaken up to the consciousness that illness is at the bottom of their mental lethargy. This is strictly true only of the least educated and least observant classes; in the more instructed classes some attention is given to the subject. But admitting this, children undergo a great deal of censure and suffering which is not always due to lack of attention. If the master of Charles had been less able to fully appreciate the correctness of the explanation volunteered, or had disbelieved as probably most persons would; the ready consideration exhibited by him might not have been so cheerfully given.

It is not upon the robust and healthy children that the demands of growth fall so heavily; as usual it is the weak who suffer. Indeed, "Everywhere and ever to be weak is to be miserable,"—even in matters in which no will is involved. In the case of the little peasant in the country with his comparatively steady growth and robust physique, the rhythmic periods of growth are not felt very keenly. But it is far otherwise with the less robust, the more sensitive, the more rapidly waxing children reared in towns. They feel these periods of growth much more intensely; and it is in their case that attention to these times of growth is so necessary.

These periods of growth, too, occur irregularly; and so to some extent have escaped the recognition which would long ago, doubtless, have been accorded to them, had these periods occurred with the regularity which is exhibited by vegetable life. With the returning warmth of spring the sluggish current of vegetable life wakes up, and rapid movement is inaugurated. During summer a decided increase in bulk is achieved; and then in autumn down come the leaves—the respiratory apparatus, and the plant goes into winter quarters, and settles down into mere existence. In the lower animals the periods of growth are often so regular as to manifest rhythm unmistakably; and the farmer calculates upon the growth of his stock in spring with unwavering certitude. In human beings this rhythm in the general nutrition has not yet been observed; and we only possess vague impressions that growth in children is most marked in spring and in autumn; but I am firmly convinced

that more acute observation and attention to the subject will demonstrate that the periods of growth are not merely irregular movements instituted by chance; but that they obey some laws, and probably those of rhythm. Should such a conclusion be reached, it would be of incalculable value in aiding us to observe the first commencement of each growing fit, and so to take our measures accordingly. The periods of active growth may be rhythmic, or not; it is enough for us at present to recognize clearly the fact that growth is not achieved by a regular steady progression—but rather by a series of intermittent bounds. There may be a slow addition to the stature during the intervals of quiescence; but growth is mainly accomplished during these limited periods. It is to this manner by which growth is attained that the disturbances occasioned by it are mainly due. Were the growth steady, regular, and uninterrupted, little disturbance would be occasioned thereby. The system could readily maintain an enduring equilibrium betwixt the assimilative powers and the demands upon them; betwixt the need of the brain and its blood supply. But these intermittent periods come suddenly in and rudely disturb the pre-existing balance. The harmony existing is dislocated; and a sudden demand upon the organic processes interferes with the functions of animal life. The more delicate the organism the more acutely is the disturbing process felt; the more robust—the more perfect the assimilative powers, the less commotion is created. Consequently we find that these disturbances are more pronounced amidst town children, than country children; amidst girls than boys. About these two statements I am clear in my own mind. It is quite true that in my early days, when in practice in an agricultural district in Westmoreland, my attention was first drawn to the disturbances set up by rapid growth; in consequence of a feverish condition seen in the most pronounced cases, and requiring medical interference. My father, also a medical man, was so impressed with the circumstances attendant upon these febrile conditions associated with active growth, that he designated the condition "Growth Fever."

Without wishing to institute such an expression, or to attempt to give it any permanency, I allude to it as showing how the relations of growth had impressed him; and been transferred from him to me. It was no rare thing even among a sturdy peasantry, of excellent physique, to find, every now and then, a child at home from school, languid, irritable, with a heightened temperature, and much muscular lassitude; and on careful examination to be unable to discover any particular cause for this array of symptoms. This condition went on for a variable period; from one or two days in the less marked cases, to a week or two in the more pronounced ones. It was found, however, that this period of sickness was one of active elongation; and not rarely of loss of body weight. It was noticed too that such forms of illness were more commonly seen in some families than in others. The families in which these intermittent disturbances were usually found, were those where the nervous system was well developed. It was the bright families which were most liable to furnish cases of such illness in their children; and from which their more stolid neighbours were comparatively free.

As opportunities offered themselves of observing town children—first in the manufacturing town of Leeds, and subsequently in the

out-patients of London hospitals—these early impressions were deepened. Children were commonly seen in this state of lassitude and malaise—scarcely ill enough to be put to bed, and yet clearly not fit to attend school. By a little more observation it could be seen that this condition of general malaise was different from the more marked febrile conditions—in degree merely. In neither was the condition due to typhoid fever, overt, or masked. They presented quite a different aspect, and the *tout ensemble* was essentially unlike. They were more or less pronounced forms of the systemic disturbances set up by active growth.

Now as to the second assertion—viz., that these periods of active growth leading to general disturbances of the health, are more common amidst girls than boys. In the first place, we know, on the authority of Quetelet, that growth, during the years when it takes place, is more rapid in girls than in boys. Consequently, if growth consists of intermittent, if not, indeed, of rhythmic bounds, girls must be more subject, up to certain age, to these disturbances of active growth. They are either more frequent, or more pronounced. That is self-evident! I am inclined to think the latter the case—that the “growing fit” is more pronounced in girls. They wax more during each period of rapid growth. This makes such periods tell upon them: while their greater delicacy of organisation renders them more sensitive to the rude impact of a growing fit. It is very common, amidst the out-patients of the West London Hospital, to see a girl of eleven, or twelve brought by her mother to have the question settled by medical authority—as to whether the child is fit to attend school or not. She has her doubts as to its fitness; but is in fear of the action of the school board authority, if she withdraws it upon her own responsibility. The child is often a fair, delicate, pretty creature; with flaxen locks, a forehead high and broad, a look of well-marked intelligence in its eyes, which are shaded by long and silken eyelashes. In fact, it is an unusually pretty and intelligent child. It is, indeed, just one of those organisms which is most susceptible to the disturbing influence of a fit of active growth. The child is usually languid and unenergetic. It complains of headache very commonly; at other times it also complains of pains in its limbs. Its mother says it is always at its books, and likes to learn its lessons. It is distressed because it does not get through them properly; because, in spite of all its efforts, it cannot keep its place in the class, but steadily drops lower and lower. Its work fatigues it; it is less and less equal to its miniature labours. It works more and achieves less than is its wont. It is evidently crippled, for the time being, in its intellectual efforts. When told that it must stay away from school, and be kept in bed, it usually commences to cry. The objects of its childish ambition are fading away, and the vanishing prospect is too much for its undeveloped self control. It is not idle about its lessons; it is morbidly afraid of forfeiting the esteem of its teacher, and makes efforts in excess of its powers. It would, indeed, willingly, by voluntary effort, endow itself with the capacity to maintain its miniature oil; but this is physically impossible. No effort of will can extricate it from the thralldom of physical conditions. There is nothing for it but to bow to the storm and await in quietude its cessation; after which it returns to work with renewed and redoubled

energy. Where a child of this disposition and physique is encouraged to work, whether by teacher or parent at these times, it is liable to become ill. Its powers break down, and it is liable to some nervous affection; or even to that form of fever, with great cerebral disturbance, known as, “brain fever.” Even when such serious consequences do not ensue, it is exhausted by its efforts, and a long period of mental quiescence becomes imperative. A few weeks of painful toil,—the more painful that the results are so disproportionate to the efforts made, have resulted in a period of enforced rest for an equal number of months. But, suppose the reverse to take place.

Suppose the child is permitted to rest in mind and body during this limited period of a few weeks; and then follow some months of active energy—when it goes to its work with pleasure, with the delightful consciousness of ability and of success awaiting its efforts. How different the results! How much of pain and dissatisfaction in the first case; how much of pleasure, of intensified delight in the latter. I presume we have none of us forgotten our delight in our childish struggles, or are incapacitated from sympathising with these infant toilers. We would willingly aid them if possible; save them from all suffering, from all fruitless labour, so far as lies in our power. In my native county—Westmoreland—the education of children is a matter of primary importance. That county has always held a conspicuous position for the education of its children; a position of which it is justly proud. As a native of that county, I feel the importance of educating children during those fleeting years, when a course of systematic education is alone practicable—of utilising to the full the few brief years of school attendance—but I never refuse a certificate of unfitness to attend school to my little patients when incapacitated by a period of active growth.

It is obvious enough that the tax of rapid growth will be more keenly and acutely felt by the sensitive and the delicate, than the robust and the strong. It will press most heavily upon those least able to bear it, and especially upon the underfed. Where the nutritive material is but scantily supplied to the starving brain and graving tissues, the most suffering will be experienced. Consequently, we find that girls suffer far more frequently than boys; and withal more severely. The appetite of girls is more fastidious than that of boys; and they are more subject to loss of appetite. The coarse food of the very poor they often cannot eat; and still more frequently cannot digest. Consequently, in hospital out-patient practice it is more common to find girls coming before one's notice suffering—truly suffering, from the tax of acute growth—than boys. Of the boys who there come under notice, as a rule they are bright, sharp boys, with well-vaulted skulls. These boys have a somewhat feminine constitution. They have the brightness and the sensitiveness of the girl about them; generally, too, they are tall for their years. At other times, a low-browed, stolid little fellow is presented, whose intelligence has fallen, under the pressure of the demands of acute growth, to the level of an imbecile. Poor little fellow! It has not yet far to fall; but the fall is perceptible enough. If the bright are more liable to these periods of taxation, and the effects of it acutely felt by them; it is, perhaps, in the dull child the in-

intellectual paralysis so induced is most pronounced. But girls alike feel the pressure most when the nutrition is less of appetite soon puts the child of the wealthy man poor man on a level. This is an important matter for those who have charge of children, and especially girls. If, during active growth, the appetite fails for a day or two, the child is marked; and the child falls away very rapidly. The want of food is no matter how brought about, and the severe demand soon brings the child to a readily perceptible extent. It achieves the same end; for if food be not digested it may never be swallowed; perhaps indeed the meal has only a much waste of digestive material in the unsuccessful assimilation of it. Growing children should then be given easily digestible food that can be furnished in any weather is cold they should be warmly clothed as they readily lose heat, and so catch cold; and this may be the foundation of serious long mischief.

It is time now, having considered the effect of growth on the body powers of a child, to approach the practical side of the question, how to determine the presence or absence of acute growth; and how to be done during it. If all that observation has to be some practical good and benefit; it may be interesting, but instructive or useful. It is not, however, a question of result, attractive. What has been said about growth, as to its nature, character, as to its limited periods of activity, and its comparative quiescence, will suggest to the observer the way of ready detection, and of lessening its danger to the child. In the first place every school should have a measuring tape, such as is used in the army to measure soldier recruits; the measurement of each child should be taken every six months or oftener if need be. The children would readily be measured, they are very much altered from what I was when a child, gradually ascending marks, beside a door, had a wonderful activity for me during the time I was a growing child. If all probability children remain the same in that respect, monthly measurements would not only be cheerfully accepted, but would greatly interest the children. If this were systematically done and a record carefully kept of such measurements, it would be easy when a child was listless and inattentive to have it measured, and if it was found to be growing, to watch it, and make all for it. Of course, such a plan would be perfectly useless simply a farce and an amusement, unless the measuring was fully and accurately performed. It should be done or supervised by a competent and responsible person, who is intelligently aware of the importance of what is being done; so that the result is trustworthy and as such to be relied upon. If the measurements are inaccurate, all conclusions based, or to be based upon them, are untrustworthy, deceptive. If then by such means a record is found to be growing, a clue would at once be furnished as to the condition; as to whether growth or idleness was at the bottom of its lethargy. By such systematic measurement not only highly important and interesting information about the children be gained; but soon a mass of information would be collected as to the laws of growth in children generally; material