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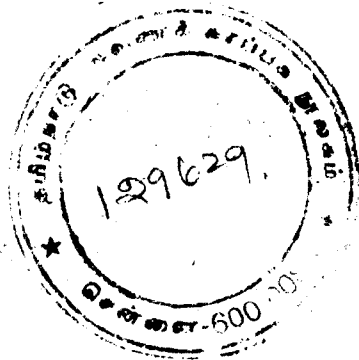
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The Educational Review

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[No 8.]

MADRAS UNIVERSITY CONVOCATION ADDRESS.

BY MISS ELEANOR MCDUGALL, M.A., D.LITT.,

Principal, Women's Christian College, Madras.

THE ceremony of to-day is the only occasion of the year when our University comes together to perform a common act, assembling for a common purpose this great and greatly varied multitude. As the University grows in age and glory, striking yet deeper roots in the life of South India and bearing yet richer fruits of achievement and renown, it may be hoped that days will be set apart for other solemnities—to commemorate the services of founders and benefactors, to proclaim the roll of famous men and women of the past, sons and daughters of the University of whom she is proud, to render common thanksgiving and worship to God, the Giver of all wisdom and the Goal of man's highest thought. But the one ceremony which we have as yet instituted looks to the future, and centres round this vast throng of young people here assembled, who have this very hour entered into the great fellowship of the University of Madras. Our chief thought must be of them. A small proportion are looking forward to a year or two of further study, but most of them have left the classroom for ever. It is some months now since the news of their success reached them, and the first relief and joy, the delight in the congratulations of friends and teachers, the exhilarating sense of achievement, have lost their first freshness. They have already entered upon the professions and vocations which will be the occupation of their working life. The brook has flowed into the river ;

be forced to attempt any activity of which it is really frightened or in which it does not want to take part. If the teacher has a reassuring manner and used judgment in choice and progression of work, there should be little difficulty on this head in the long run. Children who begin by staying out of an activity find the ease and enjoyment with which others take part reassuring and eventually join in themselves.

Senior girls are particularly in need of training that will give them poise. In comparison the child is unself-conscious as a savage in one sense and yet naively anxious to show off. The adolescent girl is newly aware of herself as an individual. She grows rapidly and her body cannot be relied on as a machine as when she was a more compactly built child. She is sometimes clumsy and aware of being so, and hence she easily slips into giggling and exclaiming when she fails and giving up at a difficulty, letting her personal chagrin be seen. As the class standard improves there will be progressively less calling out, exclamations, nervous laughter and protesting for the sake of being reassured. A sympathetic, clear-sighted teacher will be able to give such girls self-respect as a group and an increasing sureness of body to back it up. If, of course, the girls have had adequate physical training teaching from the infant school up, the teacher in the senior school will have the less problem and a more advanced standard of work can be attained.

With a class of little previous training, the first aim to work for will be to

establish a class tone of control in small points and for a matter of seconds only. Thus a class might be expected from a rank to run forward and stand quite still to 'attention' on a series of low steady gymnasium forms joined end to end in front of them. Each girl has to judge the effort so that she just stands on the form. Some at the first trial will put out too much effort and over-balance forward. Then too the class must stand on the forms without any movement until the teacher's next command,—a matter of seconds only. Almost certainly there will be girls patting their hair, moving their arms, tidying their costume, pulling up stockings, fumbling for a handkerchief or doing up a shoe.

To stand on forms adds slightly to the adventurous interest of this activity and the teacher can see and appreciate the class work the better, but the class can quite as well sprint from one line or side of the playground to the other and 'stand tall.' It is the brief instant control that the teacher exacts when they get there that counts. Small personal appreciations of posture may very well be put in quickly—"A..., B... and S... good, T... and F... much taller than last time... Kicking forward with the right leg jump off forward and land steady in knees full bend position—Go!"—and so on. There is a certain call here for social courage but little on physical.

Similarly the class can practise short sprints and instant stops on the whistle. Merely to stop, however, is not enough. The class must pull up in the minimum

number of steps and stand quite still stretched up. For this to be done depends on the teacher's clearness that it is that she wants from them, that she will not be content with any fidgeting for that concentrated second. This does not entail being overbearing or irritable. Given the right attitude on the part of the teacher, the class should *want* to co-operate in attaining the standard set.

Concurrently the class would probably begin to run along forms joined end to end. Though not difficult, this needs rather more balance than appears. The forms must be set steadily on the ground. At first the class will run slowly and at widely spaced intervals. Have instant halts and stretch up in the course of this running. As the girls get easier they can run faster and more closely following one on another. This feeling of people coming on behind, which might make an unskilled girl fussy and nervous, is progressively stimulating in a small degree as the class gets more surefooted. Such a class has gained both in physical and social courage. Skipping, hopping, skip-jumping and other variations can be substituted for running progressively. Jumping narrow gaps of perhaps a yard between forms, or stepping down and up again on to the next form over wider gaps are other possibilities.

Informal hurdling with the forms put round the playground at wide intervals, gives a satisfying feeling of daring and of physical vigour and ability, without there being any great danger. There is no holding back in it physically which

makes it more a matter of training physical courage perhaps.

Running over four forms placed parallel about a yard to two yards apart—the wider space is the easier—trains agility. The class can step one foot on to each form and run on continuously or bound over the forms or with the forms closer together step from form to form. At first each four girls—four should be able to work at a time—should start on command and the next four should not start until the set before are on the last form. This, as in running along the forms, means that no one feels hurried. Once the class knows what it is aiming to do, sets can, as a progression, start at lesser intervals. The nearer together are the forms however, the more likelihood there is of mis-step at one form causing a fall on to the next form and falls are to be avoided because, apart from individual feelings, they destroy class confidence.

Jumping to stand on two forms piled, is a further progression. Vaulting forms, jumping 'on and off' and in a rhythm from astride stand across the form are only some of many possibilities. Vaults over a horse are of similar value. For such work there must, of course, be careful support.

Lacking forms as apparatus, such training in keeping cool to produce rapidly accurate directed movement can be attained, in one way, by skipping through a rope in a stream, and eventually getting to the point of not missing a turn of the rope. Dutch skipping with two ropes is a more advanced skipping

the stream is wide and deep, the banks remote, the currents swift and strong, and the young graduates realize, perhaps with some misgiving, that the days of shelter and freedom from responsibility are ended. But the ceremony of to-day assures them that their relation to their *Alma Mater* has not ended—in some senses it has only just begun.

Graduates of the year, the University welcomes you into the fellowship of its *alumni*. No longer does it exercise over you any control, yet by the ceremony of this hour and by your promise just now spoken you belong to the University, and the University to you, in a deeper sense than before, and we do not doubt that your promise to bear yourselves worthy of your name as graduates of Madras is a serious matter to you, and that you will keep it in all gratitude and loyalty. The rite which has just been performed is in America significantly called "Commencement," and its main thought is not of your past efforts or of the achievement of your degree, but of the work for which you have been prepared and the task to which you are called. As members of a University whose function it is to send forth year by year "a supply of persons duly qualified to serve God in Church and State," you will bear in your turn the responsibility of the well-being of South India in all its higher aspects and functions. Not endowments or equipments or buildings, not wise regulations or efficient administrations, secure the vitality of a University or the happiness of a State, but the spirit of the privileged and educated men and women on whom the University has laid its kindling and restraining influence, arousing them to hopes and aims far beyond self-interest and self-regard.

The duty of the University is twofold: to increase knowledge in itself and to increase

the number of those who can receive and make fruitful use of knowledge. Some of the work of our University has in past years lacked depth and height because the first of these two functions was unduly neglected, and we must all rejoice that a better day has begun to dawn. That it is the duty of the University to increase the sum of human knowledge, to extend yet wider the shores of light, to drive ignorance and obscurity away from all the regions of human interest within its province, few will deny. Knowledge is in itself a divine and beautiful thing, a positive good in itself, and one which we are bound to impart as well as possess. To every nation has been given a contribution of its own to make to the mental wealth of the world a contribution which no other nation can make. If any nation fails to fulfil this responsibility all must suffer loss. Until South India has contributed its distinctive experience in psychology, physiology and anthropology, for instance, other nations can have only a defective and obscured insight into these great fields of knowledge. In this richly endowed land and people of South India there are vast possibilities of knowledge and enlightenment still unexplored, and not yet made available for the benefit of mankind. The University is the natural and appointed channel for these streams of new truth, and though it has hardly entered yet on its great task, still an encouraging start has been made in these last years, and we can begin to see more clearly the outlines of that goodly land which it will one day invade and possess. Moreover if a teacher who has ceased to learn is a guide whose lantern has gone out, a University which has ceased to add to knowledge is no longer a garden but a flower-shop.

To give oneself to such work and to enable the University to serve humanity in this

great and disinterested way is indeed a noble ambition, and we may hope that some in this gathering will hear and obey the call to such a life. But this call can come to only a few. Exceptional powers of mind are needed and there must be a detachment from personal aims and ambitions such as most men cannot attain, and many do not desire to attain. To most of you the University is rather an *Alma Mater* than a heroic leader in a life-long service of knowledge, and your part has been rather to receive than to give. But on you also the University makes a claim through the other part of its function—the training of men and women to serve their country in the path of action rather than of study. By imparting relevant knowledge indeed, but much more by inducing a certain attitude of mind, by instilling a certain habit of intellectual activity, the University strives to train its *alumni* to a distinctive way of doing things. The State must be governed and administered, public life must be guided, the liberal professions must be carried on, the higher forms of trade and commerce must be maintained. For all these purposes technical knowledge is needed which the University provides, but her higher duty is to see that the way in which that knowledge is used and applied should be the very best possible. There is no surer test of the healthy or unhealthy condition of a State than the tone and temper of its professional classes, and as the University claims the responsibility of the training of these, she looks with eager concern and hope upon her graduates whose fidelity to her training must so soon be tried.

A liberal profession is one worthy of a free man, a profession which no slave could or would adopt, the occupation of a person who is free from bondage to absorbing personal

desires and ambitions. Renown is not its objective, and money still less so. The man of liberal education is "at leisure from himself," and free to give his best thoughts and efforts to the tasks of a disinterested service. The University does not train men and women to become rich, though it enables them to earn the moderate income which is all that a man of liberal education desires. One who has mental resources of his own does not need wealth to provide him with enjoyments. Opulence may come to a University graduate, and fame has come to very many, but these are best worth having if they come unsought. The great aim of a liberal profession is not to make use of other men, or to dominate them, but to serve them in the way which that profession has made its own. We make a false antithesis when we contrast liberty and service. There is no slavery so abject as bondage to one's own undisciplined passions and caprices, and if the object which we serve is high enough, "service is perfect freedom."

From that bondage the University has sought to free you, in that service she seeks to enlist you. By opening to you many regions of absorbing interest, by teaching you to find a pure and lasting pleasure in books, by giving you access to at least two great literatures, by bringing you into stimulating contact with older and more learned people, your teachers and professors, by affording you intimacy with fellow-students in many delightful friendships, above all, by the mental and intellectual training of hard and exacting study, she has sought to set you free from crippling self-regard, from stultifying pride and prejudice, from the vague miseries of mental vacuity, from the ineffectiveness of a desultory habit of mind, from a craven

fear of criticism or blame, from subjection to the tyranny of custom, and from all the pettiness which brings about more pain and distress than the grave deep tragedies of life. If the University has had its will with you, if it can look on you as you leave this assembly with the assurance that its discipline has borne fruit, then the country may hope much from the host of graduates gathered here this evening, and India, at this stirring time of hope and opportunity, terror and risk, may look with confidence towards this great throng now coming forward to her aid. For what India needs, and what all countries need in these perilous and momentous days of ours, is not only or chiefly the leadership of men endowed with genius, but much more the faithful and willing service of great hosts of men and women citizens endowed with well-trained minds and inspired by self-disciplined patriotism, who will carry on the public life of the nation with integrity and efficiency, maintain and improve the high traditions of the liberal professions, and form wisely and express worthily the public opinion which is the ultimate ruler of all modern States.

Every graduate here present will be called on for such service, but there are some whose responsibility will have a special as well as a general significance. To you who have been trained for the legal profession the country will commit the sacred charge of her laws, and her honour at home and abroad, trusting that you will render justice accessible to the lowliest and most helpless, that you will maintain every man in his right, that you will defend the cause of the widow and the fatherless, that no thought of personal gain will tempt you to foster strife and multiply litigation, nor any yearning for fame induce you to make the worse appear the better

cause. "That justice be done though the skies fall" will be your care even though the fall of the sky imperil your own dwelling. If the dangerous and dubious gift of eloquence has been entrusted to you, you will remember that flame is a good servant but a bad master; if you have skill in subtleties and complexities you will use these to illuminate and not obscure the rights of a case. Every generation of lawyers enhances or endangers the honour of the legal profession, the security of the private citizen, the welfare of the widow and orphan and of all who are desolate and oppressed. Your indispensable service to your country is to keep pure the sources of justice and to hand down to those who shall follow you the tradition of a legal profession without fear and without reproach, of stainless integrity and exacting honour.

To the medical men and women about to enter on their compassionate ministry of reducing the sum of human pain and anguish there is little to say. The medical tradition is so beautiful and high, and it has wrought so effectually on most of those who follow this vocation, that the doctor has with justice been called "the fine flower of our modern civilisation." He has rightly come to be regarded as the most trustworthy of beings, and you will start with the immense initial advantage that by the mere nature of your profession you are always sure of a welcome and will be met with confidence. It is a great advantage also that unselfishness, courage and compassion will always be expected of you, that any failure in patience and sympathy, or any reluctance to sacrifice yourselves, will be regarded with amazement, that unfaltering kindness on your part will be taken for granted. Where so much is expected, much will nearly always be forthcoming—such is

the value of tradition. Some of you by definite choice, and all of you in some degree, will be engaged in the prevention as well as in the cure of disease, a far more rewarding effort. For disease must be cured in the individual, but it may be prevented in the multitude, and the discoverer of a new prophylaxis may avert suffering from millions. Before you all gleams and burns the guiding light, the glowing hope that by brilliant conjecture and patient toil of experiment you may light upon the secret magic which shall meet and overthrow some hideous enemy of man, leprosy, cancer, cholera, or even check the onslaught of mental disease and disaster. But the more splendid the tradition, the greater is the ignominy and reproach of any who may dim or soil the glory of "that profession which has at all times and in all lands been held in honour by men."

Many of you also will enter upon a yet more sacred vocation, the training of children and young people in school and college education. There is no wider sphere of national service than this, nor any more important. If the educational problem could be solved and every child educated just as it should be, statesmen would have few difficulties to contend with. It is the intractable uselessness of ill-educated human nature that causes most of our social and economic ills. The secret of welfare in any State is that each citizen should have his suitable and recognized function and be able and willing to fulfil it, and such is the aim of the educational system of a country. But systems, curricula, and examinations, however ably devised, buildings, equipment, and text-books, however lavishly provided, are useless and futile without the one essential of education, the teacher with the divine spark of inspiration and devotion.

This is work on which no man or woman should enter without vocation. The performing of it is in itself delightful, for we are dealing with the hopeful and charming part of the human race, we are preparing good rather than combating evil, we renew our youth in sympathetic intercourse with our pupils, and every teacher worth the name has a present reward in their affection and confidence. But teaching is rightly classed among dangerous occupations—dangerous to the teacher if his power over the children renders him a despot, and dangerous to the taught if the spirit which permeates the classroom is sordid, shallow or false. In education there is no corpus vile, no cheap substance, on which to experiment; we have to handle the most costly and sensitive material known to man—the mind and soul of a child.

Some of those who teach will be engaged in College education, and you will sooner or later take part in the life of this University of Madras to which you owe so much, and will carry on its work and share in its counsels. All of you, it is to be hoped, will by your votes as registered graduates influence the policy of the University; a few may rise in their day to the high office to which we rejoice to see our Vice-Chancellor return; there may be even among you a future Chancellor. Upon all lies the responsibility of maintaining and increasing the honour and prestige of the University. Madras stands high among the Universities of India, but no eminence is secure. There is always the steady drag of importunity from without, to lower standards, to slacken the discipline of hard study, to discard thoroughness, to blunt the edge of accuracy, in the vain attempt to reduce the proportion of the unsuccessful. It will be your duty to resist this demand, to

insist on sound learning, and to keep the entrance of the University shut to immaturity and incapacity. "Entrust not thou the tasks of might to weakness." The presence in College classes of children of fourteen and fifteen years lowers the dignity of the University, and induces in High schools a hectic and feverish precocity which is an unmitigated misfortune to the child—more sinned against than sinning—in whom it is fostered. The presence in College classes of the incapable, whose highest achievement will be to attain on the second or third attempt to 35 per cent., is a wrong done both to the University and to these unfortunate young people whose life would be far happier and more dignified if they were engaged in the many other wholesome and honourable tasks which life has to offer them. University life is so full of interest and value that it naturally attracts many who are not at all qualified to derive any real good from it, and who suffer severe and preventable pain in forcing their natures into an unsuitable mould. If these become numerous, compassion shews the way to a degradation of the University standard to their capacity in order to alleviate their distress. Hard cases make bad laws. The lowering of the demands of the University promptly arouses academic ambition in candidates still more unsuitable, and yet larger numbers flock into the already overgrown classes. In order to meet their capacity the teaching is perforce stripped of all that was intellectual and educative, and what should have been a joint exploration of truth or beauty becomes a mere drill of mechanical processes. "For the sake of existence to throw away all that makes existence desirable," to make room in the University for the unsuitable at the cost of rendering the University course worthless

even to these, is obviously unwise; yet it is a temptation which constantly confronts us, and which it will be part of your service to withstand.

Some of you will enter upon the less perilous and responsible, but equally difficult, work of educating older people through authorship. Books and newspapers, and, to some extent, plays and cinema films, are the school of the adult population, and the production of these is largely the province of University graduates. A country looks to its University men and women to create literature which shall add to the beauty and glory of its language,—which may indeed avert the death of that language. For in these days of rapid human intercourse and of interests and enterprises which involve the whole world, the barriers set by diversity of speech must inevitably be lowered and rendered less separating. The demand for a common language for the human race, whether it be Hindi, Chinese, English, Spanish, or some other tongue, is sure to become more and more insistent, and this will inevitably lead to the gradual disappearance of many languages now in wide use. The one thing that will save a language is the creation in it of literature so beautiful that men will be ready to go through the toil of learning to read it. A language earns length of days by the literature it produces. We still learn, read, and delight in Sanskrit, Latin, Greek and Hebrew because there are immortal poems in these languages, whereas the speech of Carthage, and of ancient Egypt and Assyria, mighty though those empires were, can be found only in museums.

May it be granted to some of you to ennoble your mother-tongue by writing deathless

poetry; but the power and inspiration for this can be given to few. Yet on all graduates lies something of a responsibility for the poetry of their country. It is true that the University cannot make poets—indeed the history of the academic experiences of young poets has in all lands been rather depressing—but the University supplies something which is quite essential to the growth of great poetry. It prepares an audience for the poet, imparts the literary taste that can understand and enjoy his work, gives him the circle of friendly readers without which the best poetry does not come into being, and the trained and disciplined criticism which will inspire him to put forth his very best. This service the University should do both to its poets and their readers. It has been said that the test of education is its power to impart delight in reading good literature. If you are leaving your College without a taste for reading, if you prefer magazines to books, and selections and abridgements to the real thing, your education has been a failure however great your academic success may appear to be. Few of us can ourselves create great literature, but all the sons and daughters of the University should be able to serve their country by demanding and encouraging good books, and can discourage by ignoring them such tasteless and listless writings as may from time to time appear. The reading public will naturally be guided by the judgment of graduates who read and talk about books and who review them in the public press. You are in a large measure responsible for the level of the current literature of your country.

This responsibility will in a special degree lie on those of you who make journalism your field of service. On such indeed lies a very heavy weight of responsibility in every

respect, for the daily Press is nowadays almost the most potent influence for good and evil that we know. It insensibly moulds the habit of thought of its daily readers to generosity or meanness, self-interest or patriotism, a love of truth or a thirst for excitement, self-flattery or self-criticism. This subtle influence is far more momentous than the newspapers' advocacy of particular views. Yet this too is very important and an irresponsible Press is almost the most baleful curse that a country can suffer under. We in Madras are fortunate in the tone and temper of our two chief newspapers, but it is easy enough in many other places to see how a powerful and able newspaper, inspired by no higher motive than the love of excitement, may poison public opinion at its source, work cruel injury and wrong to individuals, debase public taste, and become the fountain of communal and national bitterness and strife. Yet the responsibility is not with the journalist alone. Every nation, it has been said, gets the Press it deserves. Newspapers deeply influence the taste and opinions of their readers, but on the other hand they supply what the public asks for, and are sensitive to every fluctuation of the popular demand. University graduates can render service to both these reciprocal influences. As journalists they can use the balance of judgment, freedom from prejudice, and exactness of expression which the University has sought to teach them, and as readers of newspapers they can demand a worthy treatment of subjects worthy of record, and discourage sensational exaggeration, trivial silliness and vindictive bitterness.

To many of our graduates life does not offer an academic career or entrance to one of the liberal professions, but a field of work

in public administration or in business. Many of you will enter the service of Government or some public body, and pass your life in working some part of the great machine of our civilisation. Large sums of public money will pass through your hands, and on your efficiency will depend the smooth and successful handling of those countless transactions which unite us into a corporate body. You will need all the thoroughness, perseverance and accuracy which the University has sought to implant in you, and all the trained intelligence which her discipline has brought forth in you; for your responsibility is very great. On the uprightness of the administration depend the safety, honour and welfare of the people, on the efficiency of the administration depend their comfort, ease and leisure. It is wonderful to note how much avoidable misery can be caused by mere slackness and inefficiency in the public services, by procrastination and delay, by disorder and muddle, not to speak of graver failings. If the true patriot is he who pays the income-tax promptly and cheerfully, rejoicing to do his share in bearing the public burden of his country, so the true servant of the public is he who administers his office with the same interest, care and solicitude that he devotes to the management of his family concerns.

Some of you, graduates in agriculture and engineering, will devote yourselves to increasing the material resources of the country, promoting its fertility, and rendering traffic and transport more swift and safe. For these and other similar indispensable services graduates are needed who will bring to their task the technical proficiency, resourcefulness, and alertness which the University has sought to foster in them, and along with these qualities the devotion of patriots who see

their motherland in the arid soil to which they lead the streams of healing, and hear the cry of their country as they penetrate with their roads far into the pathless jungle. Many will have control over large numbers of workmen, and will not forget the lessons of brotherhood and human sympathy learnt in the crowded intercourse of their college days, or be unmindful of the doctrine of the University that all privilege entails duty.

Year by year an increasing number of graduates take up commercial pursuits, and this is not in any way to be deplored. Many countries have come to realize the advantage of employing for the purposes of trade and business men whose minds have been widened and strengthened by University education. Such can understand the theory as well as the practice of commerce and look beyond immediate profits to remoter gain; they can realise that exclusive devotion to self-interest and ruthless disregard of the welfare of others are as unrewarding in commerce as in all other human concerns.

Into most of these professions and occupations, though not yet into all, women graduates as well as men will find entrance, and it is with great satisfaction that the University sees from year to year an ever larger band of women taking part in the ceremony of graduation. The feelings which stir the men graduates are shared by the women, but I think that we are moved by a yet deeper sense of gratitude to the University. For we have entered on the fruits of the labours of men in which we had little share, and further we have been treated by the University with greater generosity than any public body has accorded to women—the generosity of impartial justice. Not by special treatment has

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the University helped us, nor by humiliating and weakening privileges, but by a frank welcome to meet its ordeals and stand its tests. The results so far may be viewed with some satisfaction; the First Class in History in the B.A. Examination, I note, this year consists solely of two women, and they have a very creditable place in the other lists too. Opportunity has been the great gift of the University to women, and now that so many have turned it to good effect we trust that the larger world without will deal with us as the University has dealt. The service which you women graduates will render to your country will be the reward of the University. All will gain by it, but there is a special service to your own sex which only you can give. This is the devising of a suitable education for the women of this land, a problem of especial urgency now that the demand for the education of girls has in this last year taken a new strength and insistency. It cannot be solved with complete success by men or by foreigners, but awaits its solution by Indian women. By treating you for the time being as if you were men the University has given you the mental training of which women have stood so greatly in need, strengthening the will and clearing the mind, teaching lucidity, candour and courage, and conferring a wide outlook and a balanced judgment. The time will come when women will not only receive from the University, but will give gifts in return, attaining to a full share in its teaching and administration, but that time is not yet. In the meantime it is better that women should for the most part be educated in Colleges of their own, where their own ideas can take shape and come to fruition rather than in institutions which were devised for the needs of men, where women

must be passive recipients and cannot mould or modify the education which they are receiving; but we acknowledge with deep gratitude the admission of women to Honours colleges which give them the instruction which the Women's Colleges do not as yet provide. We value and thank the brotherly spirit of those who carry on the post-graduate work of the University.

But all of you graduates, men and women alike, have other functions than the practice of a profession or business; you are citizens and members of a nation. It is not for University men and women to stand apart from the national life for which their education has been preparing them, nor would any wish to do so. All graduates should take an earnest and active interest in politics and form independent and reasoned judgments on public events; they should bring knowledge and intelligence to the help of all parties. It is certainly not the aim or duty of the University to produce men and women who by reason of their education will all belong to the same political party. There should not, and indeed there cannot be, a University party in politics. University training will be worse than a failure if it turns out *alumni* all of one pattern, or seeks to impress on the minds of its graduates one set of opinions in a region where diversity of view is the salt of life. Every political party, unless it be hopelessly insincere and unscrupulous, ought to find recruits among the young people who are just now pouring forth from their colleges and bringing with them the characteristics which may lift politics to the level of a high public service. All parties need men and women who possess the ability to see both sides of a question and yet hold steadily the view which seems to them the truest, who can

discriminate between important and trivial issues and discern what is the real heart of a problem, who can balance the good and evil of a measure or movement, and who are willing to give the adversary credit for a worthy motive. The presence and influence of such in each of our parties would go far to solve the painful problems which India and many other countries are facing to-day. What troubles our world so deeply at this time is not so much the existence of varying and indeed conflicting parties and policies as the shortage in all parties of the qualities of the statesman and the prevalence in all parties of ignorance and prejudice. It is true that every party contains some exalted and noble spirits, but every party needs a strong recruitment of such, and it is to the University that they naturally and hopefully turn in order to find them. University men and women have learnt to require evidence before they accept reports and rumours; they ask for a foundation for their beliefs; they can listen with concentrated attention to a detailed statement and grasp a complex policy; they can hear with respect and courtesy the expression of views distasteful to them; they have a sense of proportion. They have passed beyond the blind patriotism which can see no good in another nation, beyond the weak patriotism which cannot endure to recognize any lack of perfection in the motherland, and have come to the faith, hope and love which belong to the true patriotism.

University graduates are often called to leadership in the public life of their country, but our main thought to-day should be of the nobler call to service. Generally speaking, and except in the case of the very young, he who desires to lead is by that desire rendered less fit to lead. One of the great gains of our

modern times is the changed concept of public leadership. It is no longer regarded as a glittering prize, or desirable in itself as a means of wealth or distinction or influence, but as a type of service so arduous and so heavily weighted with responsibility that even a brave man will hesitate to accept it. The desire to attract attention to oneself, to be personally conspicuous, is felt by University people to be childish. Only a child frankly asks for praise and only a child can feel a pure enjoyment of it. If a person beyond the age of childhood has a strong ambition for praise it is to him a restless evil, a craving which grows by what seems to satisfy it, as if one drank salt water to quench thirst. Such a passion disqualifies for leadership. A University graduate has put away childish things, and is so deeply interested in the service he is trying to do and the cause he is trying to advance that he has not time or attention to spare for speculating whether he is being duly appreciated or fretting because not very much notice is being taken of him. Service may include leadership or may bring a man to a place where he cannot refuse it, but leadership and power are best if they come unsolicited and unstained by personal ambition.

Few graduates who are honest with themselves can look back on their four years of University life without some arousal of regret for opportunities ignored, time and talents wasted, training unused. Perhaps we feel that the University has not perfectly had its way with us. We may have failed in honesty and preferred showy and unwarranted results to steady work; we may have failed in courage and preferred the lesser to the greater good; we may have failed in self-control and still remain weak in will and unsteady of purpose; we may have failed to learn the

great lesson of concentration which would have made us able to master our future tasks. If we had the time to live over again, perhaps some of us wish to live it differently, and carry away a greater gain from our University days. But let us take courage. Failure in any worthy aim is always weakening, and therefore regrettable, but it is not irretrievable if one derives from it knowledge which may lead to strength worthy of the cost. The most momentous time of life is not that spent at College, but the years which follow graduation, when we either work the training and teachings of the University into the fabric of our character or let them insensibly drop away from us. Dissatisfaction with our own University career is worth the pain if by it we come to realize that "all fair things are

hard to win," that the path of least resistance is the path of spiritual failure, and that we need the help of a strength greater than our own.

Graduates of the year, your families and friends, often at the cost of great sacrifice, have given you four years of opportunity on the training ground of the University. The University has given you whatever you have been willing to receive of its best. Such gifts cannot be paid back, they can only be passed on. It is reward enough if you in your turn do for others what has been done for you, that as you have entered into the labours of others, so other men may enter into your labours. "Freely ye have received, freely give."

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COURAGE, pluck, is a social asset, well worth attaining if it may be. On the whole people tend to take courage in themselves for granted, that is, they are not conscious of being specially courageous, it is a part of their adopted standard of behaviour to act adequately. On the other hand people who are fearful more often know that they are so.

Courage is of two kinds, physical, in not being afraid of being hurt, and social, in not wanting to look foolish publicly. Though in thought it is possible to discriminate between physical and social courage, actually they merge. Most activities that train physical courage

also call for social courage and poise, whereas the converse is not necessarily true.

In the matter of physical courage increased agility and sureness of body eliminates progressively the need for such courage because there is past experience of having been adequate. Social courage grows largely out of courageous group tone.

Emphatically, courage is not trained by doing terrifying, dangerous or difficult activities. Of this school of thought were the people who advocated throwing a beginner into the water to make him swim lest he sank. No child should

be forced to attempt any activity of which it is really frightened or in which it does not want to take part. If the teacher has a reassuring manner and used judgment in choice and progression of work, there should be little difficulty on this head in the long run. Children who begin by staying out of an activity find the ease and enjoyment with which others take part reassuring and eventually join in themselves.

Senior girls are particularly in need of training that will give them poise. In comparison the child is unself-conscious as a savage in one sense and yet naively anxious to show off. The adolescent girl is newly aware of herself as an individual. She grows rapidly and her body cannot be relied on as a machine as when she was a more compactly built child. She is sometimes clumsy and aware of being so, and hence she easily slips into giggling and exclaiming when she fails and giving up at a difficulty, letting her personal chagrin be seen. As the class standard improves there will be progressively less calling out, exclamations, nervous laughter and protesting for the sake of being reassured. A sympathetic, clear-sighted teacher will be able to give such girls self-respect as a group and an increasing sureness of body to back it up. If, of course, the girls have had adequate physical training teaching from the infant school up, the teacher in the senior school will have the less problem and a more advanced standard of work can be attained.

With a class of little previous training, the first aim to work for will be to

establish a class tone of control in small points and for a matter of seconds only. Thus a class might be expected from a rank to run forward and stand quite still to 'attention' on a series of low steady gymnasium forms joined end to end in front of them. Each girl has to judge the effort so that she just stands on the form. Some at the first trial will put out too much effort and over-balance forward. Then too the class must stand on the forms without any movement until the teacher's next command,—a matter of seconds only. Almost certainly there will be girls patting their hair, moving their arms, tidying their costume, pulling up stockings, fumbling for a handkerchief or doing up a shoe.

To stand on forms adds slightly to the adventurous interest of this activity and the teacher can see and appreciate the class work the better, but the class can quite as well sprint from one line or side of the playground to the other and 'stand tall.' It is the brief instant control that the teacher exacts when they get there that counts. Small personal appreciations of posture may very well be put in quickly—"A..., B... and S... good, T... and F... much taller than last time... Kicking forward with the right leg jump off forward and land steady in knees full bend position—Go!"—and so on. There is a certain call here for social courage but little on physical.

Similarly the class can practise short sprints and instant stops on the whistle. Merely to stop, however, is not enough. The class must pull up in the minimum

number of steps and stand quite still stretched up. For this to be done depends on the teacher's clearness that it is that she wants from them, that she will not be content with any fidgeting for that concentrated second. This does not entail being overbearing or irritable. Given the right attitude on the part of the teacher, the class should *want* to co-operate in attaining the standard set.

Concurrently the class would probably begin to run along forms joined end to end. Though not difficult, this needs rather more balance than appears. The forms must be set steadily on the ground. At first the class will run slowly and at widely spaced intervals. Have instant halts and stretch up in the course of this running. As the girls get easier they can run faster and more closely following one on another. This feeling of people coming on behind, which might make an unskilled girl fussy and nervous, is progressively stimulating in a small degree as the class gets more surefooted. Such a class has gained both in physical and social courage. Skipping, hopping, skip-jumping and other variations can be substituted for running progressively. Jumping narrow gaps of perhaps a yard between forms, or stepping down and up again on to the next form over wider gaps are other possibilities.

Informal hurdling with the forms put round the playground at wide intervals, gives a satisfying feeling of daring and of physical vigour and ability, without there being any great danger. There is no holding back in it physically which

makes it more a matter of training physical courage perhaps.

Running over four forms placed parallel about a yard to two yards apart—the wider space is the easier—trains agility. The class can step one foot on to each form and run on continuously or bound over the forms or with the forms closer together step from form to form. At first each four girls—four should be able to work at a time—should start on command and the next four should not start until the set before are on the last form. This, as in running along the forms, means that no one feels hurried. Once the class knows what it is aiming to do, sets can, as a progression, start at lesser intervals. The nearer together are the forms however, the more likelihood there is of mis-step at one form causing a fall on to the next form and falls are to be avoided because, apart from individual feelings, they destroy class confidence.

Jumping to stand on two forms piled, is a further progression. Vaulting forms, jumping 'on and off' and in a rhythm from astride stand across the form are only some of many possibilities. Vaults over a horse are of similar value. For such work there must, of course, be careful support.

Lacking forms as apparatus, such training in keeping cool to produce rapidly accurate directed movement can be attained, in one way, by skipping through a rope in a stream, and eventually getting to the point of not missing a turn of the rope. Dutch skipping with two ropes is a more advanced skipping

activity. 'All in together,' though useful as a warming exercise, has less training value of the courage kind.

Any kind of jumping of the skilled, recreative type such as jumping in threes, high and long jumping, standing broad jumps, hop, step and jump, gives a feeling of power and exhilaration that makes for increased courage and social poise particularly if the method of jumping is coached. Leap-frog too is an advanced vault of the kind. It should be taught by stages to avoid accidents. The correct 'take off' should be practised without the vault. A common fault is to take off from one foot only. Backs should be low at first and faced sideways to the jumper and there should be a catcher standing a little to the left of the back, the girls thus working in threes.

Balancing, walking on forms and folk-dancing—Scandinavian and English for example—make calls on social courage and poise. To do them there must be a class tone that contra-suggests fussiness. In English country dancing the need for not being left behind by the music in the figure being done and thinking ahead about the next figure makes a call on mental coolness in rather the same way that running along a form in a stream needs physical coolness.

In playing a game such as basket ball, goal shooters often pass near up to the goal instead of trying to shoot, through lack of courage. Prevent this too great self-depreciation. Catching hard balls, batting and bowling adequately give self-confidence.

These are only some examples of such training possibilities. Whatever activities are taken, the success will depend on how the teacher takes them. Thus, though apparatus is useful to have, a good teacher without apparatus will get better results than a poor one using apparatus. The class attitude to work will reflect that of the teacher, but once a standard has been initiated, courage is catching and the teacher can see her group gaining in self-confidence, control and a happy unrepressed attitude to life.

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THE TESTAMENT OF BEAUTY.

BY MR. P. K. SESHADRI AIYANGAR, B.A., B.L.,

Chingleput.

(Continued from p. 461).

IX.

IN the war of instincts during the first stages of life there was a regulating medium that selected, modified and increased the instincts so as to fulfil the purpose of the evolutionary process which is always agoing irreversibly forward and incapable of being recalled at any instant in time's flow. This regulating process is of two parts (namely) natural selection, an external factor which "multiplies, varies, lets the strongest live and the weakest die," and variation, an inner creative force, a directing entity which conserves and co-ordinates the various instincts and by refining and transmitting them furthers the march of the evolutionary progress. 'In these natural instincts an element of reason or judgment always comes into play.' In man the abundance of reason, understanding and judgment have led to the subordination of instinct as an active force in the direction of advance. Reason had become so much divorced from instinct that the former had by the force of its own power set about to see reality. Its field of investigation was nature, which it dissected into its minutest parts and came upon a mere shadow of the external world. Man has come to look upon nature as a cheat that hides reality, as a kind mother that cloaks the mystery and by her sweet lullaby makes us 'rest on her beautiful and awful bosom as if it were our serene home. But the fault is not with nature, but with him, who looks up to nature for the whole truth, that is certainly not there. At best nature

bodies forth the finite from the infinite, but cannot give man the vision to see her as of the infinite. That stage could be reached only when reason dreams and understanding imagines. 'While in your pleasant dreams of reason you may drink of life's clear streams' your imagination will be an unworthy attribute if it parts company with the understanding. Though reason walks 'with gait taking gulfs in its strides as far across as in his yearly bout the throw of Saturn' the path of wisdom is to practise with the power of emotion 'though stalled in somewhere' is 'yet the piece of the everywhere.' John Donne says

'Reason is our soul's left hand, faith her right
By these we reach divinity.'

Mr. A. N. Whitehead has traced the history of thought in Europe in his book 'Science and the Modern World' and draws his conclusion regarding the limit and potency of reason. He says:—

'The tale is the epic of an episode in the manifestation of reason. It tells how a particular direction of reason emerges in a race by the long preparation of antecedent epochs, how after its birth its subject matter gradually unfolds itself, how it attains its triumphs, how its influence moulds the very springs of action of mankind and finally how at its moment of supreme success its limitations disclose themselves and call for a renewed exercise of the creative imagination. The moral of the tale is the power of reason, its decisive influence on the life of humanity.'

We therefore come to realise the fury of the spiritual existence when we enlist as belligerents in the eternal war of soul and sense till in the end religion comes to wed them in holy embrace. Reason and

belief take sides with sense and soul and in that holy battle ground of Kurukshetra the slave of the moment and the lord of eternity bring in their armies from earth and heaven. This ever-raging and never-ending combat has been described variously by many minds, in many tongues and in diverse climes. The war goes on and its history is being written. Robert Bridges tells us of the wars of the Essenes, one with the poetry of selfhood and the other with the young poetry of breed.

We of this country know more clearly of the war against self waged by Buddha and Sankara. The former fought and won and scattered the self into the *Nirvana*. This story of Buddha is about the most heroic of all the wars that man waged against the self. Touched by the enormity of human suffering he left kingdom, parents, wife, child and home, forsook his Aryan gods and after years of intense struggle and suffering and self-torture lighted upon the middle way, founded the Four-fold Aryan Path, and destroyed the self as a bogey of the mind, a fiction of the imagination, and taught man the way to look upon the self as a mirage in the void. Sankara followed later and captured the self by dissolving it in the higher self, the only reality. It was the reason of Buddha that killed the self and Sankara's self was the outcome of belief. Buddha was a rationalist who set out to destroy faith. He wanted to establish a religion based on reason and experience and appealed to his hearers by the force of his logic. Consequently he landed upon an emptiness where all the passions, cravings, resentment and delusion have died out leaving not a rack behind. Look at Sankara establishing his self on the rock of belief.

Sankara's self 'cannot be proved since it is the basis of all proof and is established prior to all proof. Logically it is a postulate. We have to take it for granted.' Belief is therefore the first condition of spiritual insight and where it exists (as in the case of Sankara) along with a prodigious intellectuality we realise that Lascelles Abercrombie's hermit was right when he said that

'The mind is to interpret to the heart :
Only the heart can answer to the world
Mind knows the speech but the heart the meaning.'

In the history of human endeavour to obtain deliverance we have to note the belief among the great and the good fed up by an intellectual conviction that the soul alone was the essence of substances and the flesh was a mere emptiness. Before Buddha went to war with self we had in India about fifty sects of hermits and wanderers who were drawn both from the Brahmins and the rest. Those were the days of revolt against tradition, established order, the caste system, traditional and ritualistic worship and in fact against the very life that was led. These religious hermits and wanderers were celibates and practised severe austerities. From all standards they were high-souled and stilled the natural possessory instinct to the extent of revelling in nudities as the last word in self-killing. It was not any false sense of heroism or a desire to look big but a developing unconsciousness and imperviousness to codes and conventions that landed them beyond the realm of nature's influence. It was not the rank sensuality that inspired John Donne to exclaim

'Full nakedness ! All joys are due to thee
As souls unbodied, bodies unclothed must be
To taste all joys.'

but an outward expression of an inward renunciation. Suka the Parrot-Nosed went about naked. He had lost his finite selfhood and had conquered the sex-instincts. When the Gopis were bathing naked he went along the banks of the Jumna and they did not feel the maiden bashfulness or a sense of shame at their stark nakedness or at Suka's nudity. After Suka had passed beyond their sight Vyasa, the author of the *Mahabharatha*, went in his usual way dressed up according to conventions. The Gopis at sight of him felt the shame and ran up to their clothes for shelter against the look of Vyasa. Even to this day to the present writer's personal knowledge there are nude sanyasis living round the regions of Badhrinath. The reader may imagine what it would be like to be naked at an altitude of about 12000 feet above the sea level, in the Himalayan heights. This war against self was raging furiously and the votaries of established order, caste system and tradition ranged themselves against the revolters and it should be stated that the war ended in a draw. The caste system of the race life and the ashrama theory of the individual life became firmly established in the social and religious codes of the country. Among the types of such contending forces we might instance the Mundaka Upanishad as the force that encouraged celibacy and held that to attain Brahman by meditation and knowledge was the aim of life. The Vajasaneya Upanishad represented the other extreme—condemned the path of knowledge and celibacy and held that the seeker after Brahman should not neglect the duties of life. The latest attack in an organised form against married life is that recently organised by Mahatma Gandhi in the Sabarmati Ashram. The rigour of the Brahmachary's life that is

demanded of the inmates of the Ashram cannot last long and is sure to end in failure. Mahatma Gandhi's attendance at a marriage of one of the inmates of the Ashram has its own meaning in respect of the cult of celibacy and its future.

Now to our Robert Bridges and the war of the Essenes against selfhood and breed. The Essenes were one of the sects among the Jews who appear in history about the middle of the second century before Christ. Theirs was a blend of severe asceticism in personal life with a benevolence towards mankind. They had come into being in an age of misrule, despotism, slavery, corruption and fanaticism and in the arms of their religious order hoped for a way of escape from rank selfishness towards a purer and holier life. With them marriage was strictly prohibited and though they were not averse to the propagation of the human species they yet took to celibacy owing to the seductions and fickleness of the fair sex. They had probably a dread of the woman who is

'In our hours of ease
Uncertain, coy and hard to please
And variable as the shade
By the light quivering aspen made.'

But perhaps they did not realise that the woman was a ministering angel 'when pain and anguish wring the brow.' They took a vow of poverty, had meagre dress, took a frugal meal, and cultivated a serenity of outlook which reigned undisturbed. This equanimity of spirit created an atmosphere of reverential fear when they sat in company and discoursed each in his turn. They were leading a busy life and had regulated periods for work, food and worship. By reason of their abstemiousness in word, thought and deed they were

healthy and long-lived. They were perhaps the first to oppose slavery. The general tendency towards monasticism which produced lay and religious orders among Brahmins and Sramans, Buddhists, Christians and Muslims also produced the sect of Essenes among the Jews. This ascetic cult thrived in Europe till the thirteenth century A.D. and then practically disappeared in the days of the Reformation. Of the Essenes Robert Bridges says

'The instinct of the sex was ever anathema to the
[Essene
Whose thought handsel'd the faith; it was to that
[sect the accursed
Contamination of all spiritual purity.'

Marriage became a hallowed sacrament within the Christian church after tough battle against two mighty outbursts of pagan poetry. Before that marriage was only 'a tolerated discordancy' and afterwards it became 'an accepted harmony'.

The poet takes us to the chaotic wars in Europe where many races fought for supremacy but all coalesced and insinuated into the general life of the continent and a host of bards began to sing 'an inextinguishable pæan of battle and blood'. These bards were engaged later 'to make like stirring balladry of Bible tales' and they wrote 'symbolic masques of Christian orthodoxy and later mystery plays.' Thus began the voyage of selfhood from the dark days of savagery to the days of romance and chivalry.

In the love sick lyrics of the Provençal Troubadours and the sanguinary chronicles of the Trouvers we come to the stage in the history of Europe when the woman was discovered from the pagan tales and

'An ideal of womanhood
Had striven into outline; which though passion
[breeded not
Yet art had grasped divining fresh motive for skill
Whereby knights, churchmen, monks, courtiers and
Scholars all childishly were enthralled.'

The poet says that 'Provençal seemed to mankind the one land of delight.' It was from these French chroniclers that 'all these poetic lore of the world flowed to us, (i.e., to Europe). While the hills of Wales and Brittany distilled Celtic traditions as the rain murmuring in the green oaks of my own Ardenes, from the Pyrenes fell a cataract of Carolingian romance. So also from the mountains of Swabia and Alsace, a flood of Nebulungen poured to France through Austrasia. The erudite poetry of Alexander and of Troy overflowed the Alps from the classic world. And even from the distant East opened by the Crusades flowed to us in fables, tales and parables the regained rivers of paradise.' The sacred wrath which love begets serves only to destroy the elements which make for hatred and division and leads to toleration. In Provence 'Jew quarrelled not with Gentile. There was peace and love 'twixt Saracen and Christian, Catalan and Frank.' To this land of freedom hastened back the Manichees to find peace on earth. The champions of Christ outdid the heathen Huns in cruelty, and, as a strange irony would have it, the Provençals and their language were wiped out. But ere the few escaping Troubadours raised a song within the church precincts

'Chivalry had won acceptance in the ideal of sex
And blending with the worship of the mother of god
Assured the consecration of marriage, still unknown
Save to the Christian folk of Europe whence it

[sprang
Thus as it came to pass, the second Essene war
Brought the New Life in which full soon Dante was
[born.'

X.

From line 741 till the end of Chapter III the author gives us a resume of all that he said on Selfhood and Breed in chapters II and III. He condenses his thoughts which he previously elaborated and gives us in words of inimitable terseness, at once expressive and aphoristic, the voyage of Self-hood and Breed through the attractions of physical beauty and the influences of spiritual beauty towards 'full fruition.' The soul of man progressively realises itself by the lure of beauty. But it is difficult to draw the line between physical beauty and spiritual beauty. Remember for instance

'That no plastic art, tho' it creates ideals
Noble as are the forms that Phaidias wrought,
Can ever elude or wholly
Escape its earthly medium.'

Does one begin where the other ends? Is man so great as the proverbial swan which separates water from milk? The path of realization is strewn with a confused and inseparable mixture of physical and spiritual beauty; and hence man wades through deserts of earthly passion and oases of heavenly vision. Perhaps in the end most men fall to idolatry of some specious appearance which commonly is a fusion of sense and spirit,

'When if distractedly he have thought
To mate mortally with an eternal essence
All the delinquencies of his high passion ensue.'

Having regard to the inherent incapacity of man to divorce the brutal from the spiritual the best way of approach to eternity lies in devising a 'spiritual ethic for conduct in life.' This attitude to life is perfectly intelligible when one realizes that the end is not ego expression but spiritual freedom. But how does one find in the bond of marriage the

freedom of the spirit? While the author admits that very few attain to spiritual excellence in married life he despises those who

'Hold it folly
To aim at excellence where so few can succeed.'

Mere impulse of sex is not the bond of marriage. Happiness in marriage depends 'on qualities of spirit and mind that are correlated therewith.' What is happiness in marriage? Is it a summation of particular pleasures? It is in the feeling that each is both which gives to married life its excellence and potentiality for greater strides into the unknown. What part a wife fills in the life of the home is easy to tell and to define. But when the married pair evolve beyond animality and feel that flesh is not the all, the stage is attained where man feels his imperfection as in the Hebrew's myth of man's creation where Eve having been fashioned out of Adam's ribs, Adam became imperfect "by loss of an original part now personate in Eve."

'But if 'tis ask'd to name what special function it was
That fell sequestered out of Adam in his lost rib,

* * * * *
It is no unique, ultimately separable thing.
As is a chemic element; for rather our moods,
Influences and spiritual affections are like
Those many organic substances which, tho' to sense
Wholly dissimilar and incomparable in kind
Are yet all combinations of the same simples,
And even in like properties differently disposed."

The author gives another answer to the question of the place of women in the road to spiritual elevation as compared to man.

'While man's Reason drew him whither science led
To walk with downcast eyes fixed on the ground

* * * * *
While man thus scratch'd the earth,
Stooping to pick up wisdom, woman stood erect
In honest human posture, from light's fount to drink
Celestial influences.'

A very high place is assigned to nature in the evolution of life.

" From blind animal passion to the vision of spirit
All actual gradations come of nature, and each
Severally in time and place is answerable in man."

Study a physical object in all its perspective
and you find reality by the elimination of
error. When man sees beauty he falls in
love with it. But love of the purest kind is
reached when

" Man groweth to find
His will in God's pleasure, his pleasure in God's
will."

This consummation is reached by the initial
faith in mankind's 'love of beauty and in the
beauty of truth.' This faith which tells us
that we are greater than we seem kindles a
hope which springs eternal in the human
breast. What is hope? It is a form of moral
responsibility? Where there is no hope there
is 'no duty, no work, nothing to be gained by
praying nothing to be lost by doing what you
like. Hell in short is a place where you have
nothing to do except to amuse yourself.' Hope
therefore breeds a celestial discontent and
inspires us to action for attaining the yet un-
attained. It is born in the blood and floods "all
the sluices of life long as the heart can beat."

XI

Science does not know this beauty which
makes the earth flower into heaven by
transfiguring love from human into divine.
Beauty of the spirit eludes the grasp of the
scientist.

" Though science measures true
Every wave length or ether or air that reacheth sense
There the hunt choketh, and her keen hounds are at
fault ;

For when the waves passed the gates of ear and eye
All scent is lost : suddenly escaped the visibles
Are changed to invisible : the five measured motions
To immeasurable emotion ;"

Science has become very ambitious. The
scientist not merely

" Inclines his ear to catch the sermon whisper of
stones
Whence now whole nations, by their treasure trove
enriched,
Crawl greedily on their knees nosing the soil like
swine ;

But has dared to twist his stiffened neck about,"

with the result that he sees the stars only as
stones. "From the point of view of philosophy
of science the conception associated with
entropy must I think be ranked as the great
contribution of the nineteenth century to
scientific thought. It marked a reaction from
the view that everything to which science
need pay attention is discovered by a micro-
scopic dissection of objects. It provided an
alternative stand point in which the centre of
interest is shifted from the entities reached by
the customary analysis (atones, electric
potentials etc.) to the qualities possessed by
the system as a whole, which cannot be
split up and located a little bit here and a little
bit there. The artist desires to convey signi-
ficances which cannot be told by microscopic
detail and accordingly he resorts to impressio-
nist painting. Strangely enough the physicist
has found the same necessity." This ambitious
programme which science has devised for its
future none the less falls far short of the study
of beauty by which the artist explores nature
for spiritual influences, because the aesthetic
aspect which is a special feature in the discern-
ment of beauty is ruled out in the conception
of entropy.

Perhaps the last word on the distinction
between science and art has been said in the
following lines of the poet

" Art is the true and happy science of the soul,
Exploring nature for spiritual influence
As doth physical science for comforting powers
Advancing so to a sure knowledge with like progress."

ANCIENT DRAVIDIC INITIAL SURD K- AND ITS MODERN DERIVATIVES.

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THE velar surd *k-* in initial positions is a
common sound in many modern Dravi-
dian dialects, but the fact that this sound was
more widespread than at present in an
earlier stage of Dravidian is shown by the
history of certain other modern sounds in
Anlaut positions, which are all capable of
being traced to an ancient *k-* through the com-
parative confrontation of dialectal cognates.

It is the object of this paper to classify
these derivatives, to explain the phonetic
changes involved, and to indicate wherever
possible the influences which accounted for
the changes.

I.

(a) MALTO *q-*.

The post-velar or uvular surd *q-* occurs
freely in Malto in the place of *k-* of southern
dialects and of the velar fricative *x-* of
Kurukh and Brâhûi. Cf. the following :—

	Malto	Kurukh	South Dr.
'to reap'	<i>qoy-</i>	<i>xoy-</i>	<i>koy-</i>
'field'	<i>qel</i>	<i>xell</i>	cf. <i>sey</i> , kann. <i>key</i> .
'red'	<i>qes-</i>	<i>xeso</i>	<i>kem-</i> , <i>kes-</i> .
'to hear'	<i>qel</i>		<i>kêl</i>
'ear'	<i>qeθve</i>		<i>kâd</i>

The occurrence of the uvular surd *q-* in
Malto corresponding to Kurukh *x-* appears
to be nearly uniform in all native words. Pro-
bably the influence of the Tibeto-Burman
languages of north-east India may have
had something to do with this change of older
k- to *q-* in Malto.

(b) BRÂHÛÎ AND KURUKH *x-*.

As hinted above, *x-*, which in Brâhûi
(according to Sir Denys Bray) has the value
of a velar fricative and (according to Grig-
nard) in Kurukh partakes of the value of a
velar and post-velar spirant, represents the
surd *k-* of the south in initial positions.

Cf. the following instances :

(i)	Brâhûi ¹	South Dravidian.	Central Dravidian ² [K (ui) — G (õṇḍi)].
'to dig'	<i>xutt-</i>	<i>kutt-</i>	
'red'	<i>xis-un-</i>	<i>kes-</i>	
'womb'	<i>xol-</i>	<i>koḷ-</i>	
'eye'	<i>xan</i>	<i>kaṇ</i>	K. <i>kanu</i>
'ear'	<i>xaf</i>	<i>kebi, kibi</i> (Kannāḍa, Tuḷu)	G. <i>kavi</i>
'tiny'	<i>xurt</i>	<i>kuṛ</i>	<i>kogi</i>
(ii)	Kurukh.	South Dravidian.	Central Dravidian.
'to finish'	<i>xac-</i>	<i>kaḷ-i</i>	
'child'	<i>xadd</i>	<i>cf. kandru, kaṛu</i>	
'field'	<i>xall</i>	<i>cf. kallu (stone) and sey (field)</i>	
'theft'	<i>xalb</i>	<i>kaḷ-avu</i>	K. <i>kalu</i> (toddy), <i>cf. also</i> <i>kaha</i> (to sport)
'eye'	<i>xann</i>	<i>kaṇṇu</i>	K. <i>kanu</i>
'to bear fruit'	<i>xāñj-</i>	<i>kāy-</i>	K. <i>kā-u</i> (fruit)
'to wait for'	<i>xāp-</i>	<i>kā-</i>	K. <i>kā p</i>
'bitter'	<i>xaḍka</i>	<i>cf. kaḍuka</i> (bitter gall)	
'to steal'	<i>xar-</i>	<i>kaḷ-</i>	<i>cf. kalu</i> (toddy)
'to be dry'	<i>xāy-</i>	<i>kāy-</i>	K. <i>kamba</i> , etc.
'ear'	<i>xeb</i>	<i>kebi</i> (Kann.)	Gõṇḍi <i>kavi</i>
'leg'	<i>xedḍ</i>	<i>kāl</i>	K. <i>kāḍu</i>
'hand'	<i>xekka</i>	<i>kai</i>	K. <i>kaju</i>
'red'	<i>xāso</i>	<i>kem-, kes-</i>	
'to reap'	<i>xoy-</i>	<i>koy-</i>	K. <i>kō-va</i>
'to bring together'	<i>xonḍ-</i>	<i>konḍu-var</i>	K. <i>koḍa</i> (to take, etc.)

¹ Is Brâhûi *xâras* (ox) with which we may compare Tam.-Mal. *kāḷa*, native? Or, is the Br. word a borrowing from IA? Besides the Tam.-Mal. word *kāḷa*, one might suggest Kui *gāro* (bullock not trained to the plough) as a possible cognate. If the Brâhûi word is a direct borrowing from IA—as it might possibly be—its relationship to Tam.-Mal. *kāḷa* (bullock) and to its congeners Tam. *kaḷ-iru* (male pig, male elephant), Tel. *gaṇḍamu*, etc., would be problematical. *kāḷa* itself in Tam.-Mal. may have been influenced by IA forms.

² The cognates given here are only those very intimately allied to the words under reference. The slight structural differences that may exist among some of these are all normal and capable of being explained according to rules of change operating generally in the particular dialect concerned. These rules are not referred to here, but they will be found in my separate studies of the

(c) BRĀHŪI AND KURUKH *k-*.

It has to be observed that it is not all native Brâhûi and Kurukh forms that show *x-* in the place of *k-*. The development of the

fricative seems to have affected only certain words, while there is another class which has remained unaffected by this change.

Cf. the following instances:

(i)	Brâhûi.	South Dravidian.	Central Dravidian [K (ûi)—G (õṇḍi)].
'bank of river'	<i>karrak</i>	<i>kar-ai</i> (Tamil)	G. <i>karrum</i> (near)
'below'	<i>ke-, keb, keragh</i>	<i>kēḷ</i> (Tamil, etc.)	K. <i>kṛuva</i> (to sink)
'fort'	<i>kôḷ</i> ³	<i>kôḷḷ-ai</i>	K. <i>kātra</i> (to fall)
'hut'	<i>kuḍi</i> ⁴	<i>kuḍi</i>	K. <i>kuṭi</i> (hut)
'to eat'	<i>kun</i>	<i>kuḍi</i>	
'flock of sheep'	<i>kur</i>	<i>gorre</i> (Tel.)	
'nest'	<i>kuḍa</i>	<i>kāḍu</i>	K. <i>guḍa</i> (cage) [said to be < Oriya, by Winfield.]

(ii)	Kurukh.	South Dravidian.	Central Dravidian [K (ui)—G (õṇḍi)]
'to expect'	<i>kāk-</i> (<i>cf. xāp-</i> also)	<i>kākk</i>	K. <i>kāp-</i> (to wait for)
'to cross'	<i>katt-</i>	<i>kaḍ-a</i>	G. <i>kaṛ-</i> (to crawl through)
'to bite'	<i>katt-</i>	<i>kaḍ-i</i>	K. <i>kat-</i> (to cut)
'to squeeze'	<i>kas-</i>	<i>kaṣak</i>	? G. <i>kaseng-</i> (to tremble)
'to put to bed'	<i>kid-</i>	<i>cf. kiḍ</i>	<i>cf. K. kuṛa-</i> (to fall)
'below'	<i>kāḷa, kāya</i>	<i>kāḷ</i>	Do.
'to pinch'	<i>kiss-</i>	<i>kipp-</i>	K. <i>kis-</i> (to pinch)
'to turn round'	<i>kir-</i>	<i>cf. kiṛugiṛu</i> (to be giddy)	<i>cf. K. kiri inba</i> (to turn round), <i>kirpi ava</i> (to gyrate).

In Brâhûi, native words with the initial surd are not considerably less in number (so far as the lists show) than those with the velar spirant *x-*; but in Kurukh the change of *k-* > *x-* has affected quite a large number of elementary words. What probably may have been the reason for the fact that some native words with initial *k* of Kurukh have developed *x-* while others retain the old *k-*? Two significant facts may possibly give the clue:—

(i) Native *x-* words followed by front vowels are very rare; the only conspicuous instance is *xeb-da* (ear) but probably an older *a* (as in Gõṇḍi *kavi*) may have been the vowel here.

(ii) Native *k* words (of pure native origin uninfluenced by IA or Kolarian forms) appear to be followed by *-i*, *i e.*, a front vowel, — *cf.* the last four words in the list (ii) above, all of which are undoubtedly of pure Dravidic origin.

individual dialects. The cognates given here are, structurally and semantically, so intimately inter-allied that we can dispense with the need for illustrating the rules of change at every step.

³ *kôḷ* in Brâhûi may have been influenced by IA forms resembling it in structure and meaning; but Tamil *kôḷḷai*, etc. (< *kôḷ*) appear to be native Dravidian.

⁴ Indo-Aryan also has *kuṭi* (hut). A native IA derivation has also been suggested for this word:—*cf.* page 72 of Thumb's *Handbuch des Sanskrit*: "*kuṭi* vielleicht zusammen mit *kaṣa*—'Geflecht, Matte'—ai. Grundform * *kṛta*."

So far as the first four words in (ii) above are concerned, it is quite possible that the influence of IA words with structural and semantic resemblance may have prevented the change of *k* > *x* in spite of the dorsal *a* following *k*. Of these, *kāḥ* (to expect) is found beside *xāp* with the same meaning; possibly IA forms accounted for the preservation of *k* in the former.

katt (to bite) resembles many NIA forms derived from कट् 'to cut.'

Spirantisation of initial *k* > *x* in *Kuruḥh* may therefore be said to have happened before dorsal or back vowels in *Kuruḥh* native words; in *Brāhūi* also the same rule may have been at work, though the retention of *k* in *kun* (to eat) and *karrah* (bank of river) cannot be explained easily.

Spirantisation of initial *k* is absent in other Dravidian dialects than *Kuruḥh* and *Brāhūi*; possibly the large number of loan-words (Persian and Arabic) with initial velar spirants may have induced the change of *k* > *x* in *Kuruḥh* and *Brāhūi*.

(d) (i) A very small number of *Kuruḥh* instances with the initial glottal fricative *h* appear to correspond to southern and central Dr. *k* words:—

	<i>Kuruḥh</i>	South Dravidian
'a bite'	<i>haḥka</i>	<i>havvu</i>
'to watch'	<i>hāḥ</i>	<i>hāḥk</i>
'stout'	<i>hunḍu</i>	cf. <i>guṇḍu</i>

The Dravidist, on the other hand, might uphold the native Dr. origin of *kuḍi*, *kuḍil* in Tamil, Malayalam, Kannada, etc., and connect the words directly with the base *kūḍ* of Dravidian, which has also given rise to many other elementary words in Dravidian. The identity in structure and meaning of IA *kuḍi* and Dr. *kuḍi* led Kittel to postulate that the IA word may have been borrowed from Dr. (vide p. xxi of the Introduction to Kittel's *Kannada-English Dictionary*). The presence of the cacuminal *ḍ* in the IA form might tend to lend support to this view; but Indo-Aryanists would maintain (vide reference above) that *ḍ* and other cacuminals may have cropped up independently in IA.

We have already seen how the spirantisation of the velar surd has affected many *Kuruḥh* words. The *Linguistic Survey* (Vol. IV, page 412) notes that in certain sub-dialects of *Kuruḥh*, the velar fricative *x* changes to *h*. It is possible that this phenomenon characteristic of certain sub-dialects may have affected a few words generally also.

The glottal fricative is not original in Dravidian; under the influence of Indo-Aryan in some cases and possibly under the joint influence of Indo-Aryan and Kolarian in other cases, varieties of the glottal fricative appear to have developed in different dialects of Dravidian (vide my paper in *IA*, Dec. 1930).

Sub-dialectally, *h* < *x* < *k* appears to have cropped up rarely in *Brāhūi*, as shown by a few *h*-variants of *x*-forms, given by Bellew and Mason.

II.

(a) The palatalisation of an old *k* to the affricate *c* (or rarely to its voiced variety *j*) or to the sibilant *ś* is another important change that has occurred in certain dialects of Dravidian. The chronology of this change is not traceable with the materials now available. Nor have the dialects showing this secondary development, consistently and regularly changed all instances of *k* followed by palatal vowels, into *c*, *j* or *ś*. The change postulated here appears to have affected one set of words which we may here describe as "criterion-words" for the purpose of the present discussion.

All these words express elementary ideas and form part of the most ancient stock of Dravidic vocabulary. A cleavage among the dialects is conspicuous, so far as these particular words are concerned:—

<i>K</i> dialects	Dialects showing change of <i>k</i> > <i>c</i> or <i>ś</i>
<i>Kuruḥh</i>	
<i>Brāhūi</i>	
<i>Kūi</i>	Telugu (<i>c</i> -, <i>ts</i> - or <i>dz</i> -)
<i>Gōṇḍi</i>	Tamil (<i>ś</i> -)
<i>Kannaḍa</i>	Mal. (<i>c</i> -)
<i>Tuḷu</i>	

(b) THE CRITERION-WORDS.

	Tamil.	Mal.	Tel.	Tuḷu.	Kannaḍa.	Kūi.	Gōṇḍi	Kur.	Brāhūi.
'red'	<i>sem-sev-suv</i>	<i>cuv-civ-cev</i>	<i>cem</i>	<i>kem</i>	<i>kem</i> -, <i>kes</i> -			<i>xāso</i>	<i>xis-un</i> .
'small'	<i>śir-sinna</i>	<i>cir-cer</i>	<i>cir-ciṭṭ</i>	<i>kinna-kiṛ</i>	<i>kinna-kiṛ-kur</i>	<i>kōg-i</i>			
'ear'	<i>sevi</i>	<i>cevi</i>	<i>cevi</i>	<i>kebi</i> cf. <i>kirmbilu</i> (ear-wax)	<i>kibi</i>	<i>kiru</i> , <i>kriṇu</i>	<i>kavi</i>	<i>neb-da</i>	<i>xaf</i>
'fire'	<i>kiccu</i> (4a) [rare.—Found in 'Kamba Rāmāyaṇa.']	<i>kiccu</i>	<i>kiccu</i>	<i>kiccu</i> , <i>kittu</i> (lightning)	<i>kiccu</i>		<i>kis</i>	<i>cicc</i>	cf. <i>xāyṣar</i> (fire)
'hand'	<i>kay</i> but	<i>kay</i> but	<i>key</i> (hand) <i>ceya</i> (hand)	<i>kay</i>	<i>kay</i> (hand)		<i>kaju</i> (hand) <i>kai</i> (hand)	<i>xera</i> (hand)	<i>kan</i> (to do)
'to do'	<i>sey</i>	<i>cey</i>	<i>cey</i>	<i>gey</i>	<i>gey</i>		<i>ki</i>	<i>ki</i>	

NOTE:—The rule appears to be broken in the case of the words for 'hand' in Tamil and Malayalam. Telugu ordinarily uses *ceya* for 'hand' but the forms *key* (hand), *ge-lu* 'hands' exist also.

kempu 'ruby,' 'redness' in Telugu and Tam.-Mal. *kempu* (ruby < red) are also

variations from the rule; but cf. Tel. *ceṇ-galuva* (red water-lily), *ceṇḡavi* (reddish colour, which show initially *c*.

Kuruḥh cicc (fire) also appears to be a variation from the rule.

We may also note here that Kannaḍa has *cinna*, *cikka* (small) beside *kinna*, *kiṛ*, *kur*—

^{4a} The Tamil Lexicon compares *kiccu* to IA *krśāna*; but I would consider it to be native Dr. and connect it with forms like Tuḷu *kiḍi* (spark), Tel. *kiniyu* (to become angry), and would regard the basal **ki*- to be ultimately related to *kāy* (to be hot), the change of *ā* to *i* being explicable on the analogy of *vāy* (to be hot) and *vi*—

(small). If Gōṇḍi *cuḍḍ-ōl* (young, tender) is also related to *kīr-*, *kur-*, then we have here again a departure from the rule.

For another set of forms which in some of the "k dialects" show *c-*, *s-* or *ś-* in the place of *k*, see below.

(c) There are some other words also in the south which show the change.

	Tamil.	Kannāḍa.	Tuḷu.	Telugu.
'some'	<i>śila</i>	<i>kila</i>	<i>kela</i>	
	<i>śela</i>	<i>kela</i>		
'to tear'	<i>kīr-</i>	<i>kīr-</i>	<i>kīr-</i>	<i>gīr-</i> beside <i>cīntsu</i>
'to scratch'			<i>gīr-</i>	
'to be spoiled'	<i>keḍ-</i> ⁵	<i>keḍ-</i>	<i>keḍ-</i>	<i>cīḍ-</i> (to be spoiled), <i>ceṛ-utsu</i> (to spoil)
'bunch'	<i>śippu</i>		<i>kīpu</i>	
'artificial tank'	<i>śīrai</i>	<i>here</i>	<i>kerā</i>	<i>ceṛupu</i>
'street'	<i>śēri</i>	<i>kēri</i>	<i>kēri</i>	

(d) VARIATIONS FROM THE RULE.

We have already adverted above to certain variations where in some of the "k dialects" we find *c-*, *s-* or *ś-*.

There are three other groups of words which have to be mentioned in this connection.

(i) Tamil *kāl-* (to flow, etc.), *śāl* (furrow, channel), *śāy-* (to lean), *śār-* (to be inclined), *śēr-* (to be joined), *śel-* (to enter).

Kannāḍa *kāl-* (to flow), *śāl-* (to flow), *śār-* (to be inclined), *śēr-* (to be joined); *jāy*, *cācu* (to lean, be reclining); *sel-*, *sal-* (to go).

Telugu *cēr-* (to be joined), *cellu* (to be current), *tsā-tsu* (to stretch), *kāluva*, *tsālu* (channel).

⁵ The change of *k* > *c* occurs here only in Telugu; for the possible reason for the retention of *k* in Tamil, see below.

Tuḷu *śēru*, *śēru* (to reach), *sallu* (to be current),

Kūi *sal-* (to go), cf. the motion particle *ka-sōl-* (to enter)

sah-, *sas-* (to stretch)

Brāhūi *ka-* (to go)

Kurukh *ka-* (to go),

All these forms appear to be inter-related according to regular rules of Dravidic change (vide my paper on "Dravidian Word-Bases" in *Anthropos*) and to be fundamentally derivable from the ancient base *kā*, *kā* (to go, move) which appears as such also in some of the dialects. The change of *k* > *c*, *s* appears here to have been due to the palatal tonality of *-a-*.

The point that we have to note here is that, in Kannāḍa, Tuḷu and Kūi ("k dialects") where we should expect (according to the general rule involved in our "criterion" words above) the old *k-* to be retained, we find *c-* or *s-* in its stead.

(ii) Tamil *kur-ugu* (to become contracted), *kurū* (small), *śur-uṅgu* (to become reduced), *śut'tiru-* (to turn round) [cf. Mal. colloquial *cit'ti-* (to move round)], *śur-uḷ-* (roll).

Kannāḍa *suru-gu*, *suṅgu*, *kuṅgu* (to become contracted), cf. *kīr*, *kur-* (small).

Telugu *tsuṇṇu* (to roll), *tsēṇa* ('whirler' = shark).

Tuḷu *kiru*, *kurū* (small), *kurunṭ* (to contract), *surunṭ* (to be shrivelled).

Kūi *kiri inba* (to turn round).

Gōṇḍi *suruṇḍ-* (to move round).

Brāhūi *kur-* (to become contracted).

Kurukh *kīr-* (to turn round).

Note that Kannāḍa, Tuḷu, Kūi and Gōṇḍi ("k-dialects") show forms with *s-*.

I consider all these forms to be allied, the primary base being *kīr-* (with its variant *kur-*) having the primary meaning of "becoming small, contracted." The variation in the character of the vowel between *i* and *u* is easily explicable on the analogy of the Tamil colloquial *kūḷu* for *kīḷu* (below), *kūḷḷu* for *kīḷḷu* (to pinch), etc. I have explained in my paper on "Dr. Word-Bases" in *Anthropos* that the palatalisation of the velar surd in this group might have been caused by the front tonality of the basic vowel which (as our cognates would indicate) probably wavered between *i*, *ü*, *u* and *u*. The semantic evolution may have followed the course:—'small' 'contracted' > 'roll' 'move round' and a differentiation may have set in, whereby *kīr-* and its derivatives denoted 'to be small,' while *kur-* and its derivatives signified 'to shrink' 'to turn round,' etc.

(iii) In the case of one particular word for 'dying,' we find the aspirated velar *kh-* in Kurukh and the simple surd *k-* in Brāhūi, while all the other dialects show a possible development of *k* > *c-* or *s-* (as the case may be).

"To die"

Brāhūi *kah*⁶

Kurukh *khē-*

Tamil *śā-*

Mal. *cā-*

Tuḷu *sai-*

Kann. *śā-*, *cā-*

Tel. *tsa-*

Kūi *śā-*

Gōṇḍi *sai-*

* Note that among what we have called the "k dialects" Tuḷu, Kūi and Gōṇḍi show *s-* instead of *k-*.

⁶ The Brāhūi word shows *k-* initially and not *ś-*, while the Kurukh form shows the aspirated surd instead of the velar surd or spirant. The forms of all the other Dravidian dialects are undoubtedly allied. If the primary meaning of 'dying' is

Our present materials do not enable us to explain these variations or their chronology, but it would be interesting to note that Brāhūi and Kurukh show the minimum favour for the palatalisation of *k-* or *ś-*.

(e) EXAMINATION OF THE COGNATE FORMS OF THE CRITERION-WORDS.⁷

(i) 'Red.' The basic vowel is *e*. Tam. *siv* is dialectal, while *u* in Mal. *cuv* is the result of the influence of the immediately following labial *v*, as in *cuvv* (straight) and *covv* (straight), etc.

The origin of *-s-* in the Brāhūi and the Kurukh forms is not clear. But *-s-* in kann. *hes-* appears before vowels only cf. Kann. *bis-* and *bem-* 'hot.'

A nasal *m* appears as a part of some of the forms in the south: *kem*, *sem*; this *m* may be allied to the nasalisation in Kurukh *ās*.

Possibly this *-m-* originally cropped up in combinations of the radical with words having initial plosives (cf. *kendāmara*, 'red lotus,'

derivable from 'passing away,' then *kah-* and *khe'* may be allied to the Brāhūi *ka-* (to go) and Kurukh *ka-* (to go) with which we may also compare the South Dr. base *kā* from which *kāl-* (to sprout, to flow, etc.) may have been derived. cf. the Kūi motion particle *ka* also. Note also that Kurukh *khe'* has the literal meaning of 'passing away,' etc.

⁷ The rough resemblance of IA *kāñcana* to some of the Dravidian forms for 'red,' of IA *śrav* to Dr. *śevi* (ear), of IA *krśāna* to Dr. *kiocu* (fire), of IA *kr*, *kara* to Dr. *kai*, *gei* requires to be investigated closely, before any theories regarding the IA origin of these words are propounded. If any relationship exists at all, it relates to a very ancient period indeed. The shadowy possibility of a pre-historic lexical relationship in regard to a number of common Dr. words should not blind the Dravidist to the individuality of these Dravidian words or prevent him from trying to follow the evolution of Dravidian forms from what we may call a 'common Dravidian' stage.

etc.) and then came to be considered as part of the base.

(ii) *kir*, *kur* are ancient bases with the meaning 'small.' The value of *i* even to-day approaches that of [*i* or *ii*] inasmuch as it has a centralised value which varies between *i* and *u*.

n of Tamil *sinna* and Tel. *cinna*, Kannaḍa *kinna* may possibly be < (*n*) *d'r* < *d'r* < *r* + *t*. [cf. Tam. *pir* and *pin* (behind)].

Kûi *kog-i* is possibly directly related to *kurugu*, etc., of the south, the basal portion of which shows *kur*.

(iii) The original base is apparently with *k*- which has been spirantised to *x*- in Brâhûi and Kurukh.

While Tuḷu *kebi* agrees with the other forms, Tuḷu *kirmtilu* (ear-wax), Tuḷu *ceraḍu* and Kûi *kiru*, *kriu*, show a strange -*r*.⁸

(iv) No special comments are needed except that literary Tamil retains the rare *k*- form in *kiccu*.

(v) The older *k*- is retained in the Tamil word for 'hand' while the related word for 'to do' shows the change of *k*- > *s*-.

(f) RETENTION OF OLD *K* IN CERTAIN WORDS OF TAMIL AND TELUGU.

It has been indicated above that not all words with initial *k* followed by front vowels, has been palatalised in Tamil, Malayālam and Telugu.

Cf. the following :—

	Tam.	Kann.	Tuḷu	Tel.	Kûi.	Gôṇḍi.	Kurukh.	Brâhûi.
'to lie'	<i>kiḍ</i>	<i>kiḍ</i>	<i>keḍag</i>	<i>kitt</i> - (to agree)	<i>kurā</i> (to fall)		<i>kīd</i> (to put to bed)	cf. <i>ke</i> , <i>kī</i> (below)
'below'	<i>kiḷ</i> , <i>kīḷ</i> , <i>kīḷ</i> , <i>kīḷ</i>	<i>kird</i>	<i>kinda</i>	<i>kruva</i> (to sink) cf. <i>kī-va</i> (to pour)	cf. <i>kiḍḍi</i> (axe-cut)	<i>kīta</i> (below)	<i>ke</i> , <i>keragh</i>	
'to pinch'	<i>kiḷ</i>	<i>gill</i>	<i>gill</i>	<i>gill</i>	<i>kis</i>	<i>kisk</i>	<i>kiss</i>	
'to be spoilt'	<i>keḍ</i>	<i>keḍ</i>	<i>kēḍu</i> (evil)	<i>ceṛ</i> , <i>ceḍ</i>		<i>kitt</i> (to rot)		
'to hear'	<i>kēḷ</i>	<i>kēḷ</i>	<i>kēṇ</i>		<i>kel-ḥa</i> (to invoke)	<i>kēṇj</i>		cf. <i>maḥ</i> (to hear)
'to scratch'	}	<i>kīṛ</i>	<i>gīṛ</i>	<i>gīṛ</i> (beside <i>ci-n-tsu</i>)	<i>gri-s-p</i>	<i>kir-vañj</i> (mark, line)	<i>kicc</i> (to break into small pieces)	
'to tear'								

⁸ Tuḷu *ceraḍu* may have been an adaptation from IA; but *kir-m-bilu* (excrecence of ear) and Kûi *kiru*, *kriu* (the latter the result of characteristic accent-shift in Kûi, vide my paper on "Kûi Forms and Dravidian Origins" JOR, 1929) are certainly peculiar. An intrusive *r* appears in Telugu words like *trullu* for *tullu* (to jump), *trôlu* for *tôlu* (first), *krakku* for *kakku* (to vomit). The appearance of *r* in the Tuḷu and Kûi forms for 'ear' cannot be said to be similar.

The apparent correspondence of Tuḷu Kûi base *kir*- to IGC $\sqrt{kru}$ from which Skt. *śru*, *śra* have been derived, remains a curious feature.

It will be found that in these bases where we should expect the change of initial *k*- > *c*- or *s*-, in Tamil, Malayālam and Telugu, we find the older *k*- retained.

A probable reason for this may have been the influence of the cacuminal consonants appearing in the final positions of bases. An examination of the above instances which (we may say here) are all that preserve *k*- even before front vowels, would show that the final consonants of the bases are *ḷ*, *ḷ*, *r* or *ḷ* all of which are retroflex consonants that might have prevented the operation of the rule of change of *k*- > *c*-, *s*-.

One cannot say at present if any other factors were also active in this direction. The presence of the cacuminals is in any case significant.

It is possible also that the ancient palatalisation was circumscribed within a particular period and a particular class of words, but of these circumstances we have now no knowledge.

(g) PHONETIC PROCESSES INVOLVED IN THE CHANGE OF *k*- > *c*- OR *s*-.

In my paper on "Dravidian Affricates and Sibilants" I have pointed out that while Telugu and Malayālam show *c* initially,

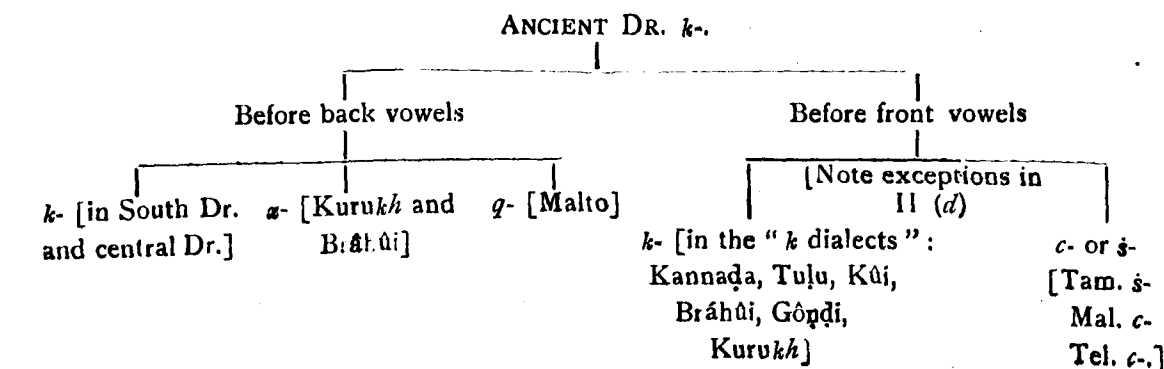
Tamil shows in corresponding forms *s*, Tuḷu shows *c* or *s* and the central Dravidian dialects show *s*. These affricates and sibilants, as I have pointed out in that paper, are derivable from two sources (*t*- and *k*-) in the dialects; so far as the old *k*- is concerned, we have seen that Tamil, Malayālam and Telugu alone conspicuously show a secondary development of this sound and the resultant sounds are generally speaking respectively *s*- in Tamil and *c*- in Malayālam and Telugu.

Which is the original of these two sounds? The forward articulation of *k*- results in the production of the palatal plosive (represented in the IPA script by [c]); but this plosive is frail and unstable in the extreme (cf. early Indo-Aryan [c]); and consequently it changes to the affricate *c* [= *cʃ*]. This affricate is represented in Telugu and Malayālam, while Tamil has dropped the plosive element of the affricate altogether and retained the palatal sibilant element *s* [= *ʃ*] regularly and uniformly in these positions.

III.

CONCLUSION.

The changes described above may all be represented graphically thus, strict reservations being made at the same time about the exceptions mentioned above.



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Presidency College, Madras.

(Continued from Page 256).

THE KINGS OF ŚARABHAPURA.

The other important dynasty of the Central Dakkan was that of the Śarabhas of Śarabhapura. This place was suggested by Cunningham¹ to be either Ārvī in Wardhā district, or Sambhalpur, in the Central Provinces. Dr. Fleet was not disposed to agree with either of these suggestions and suggested that it must be looked for under some name like Śarbhūr or Sābhūr². Whatever the real village might have been, it must have been in the neighbourhood of Raipur (also spelt Raypur) in the Central Provinces,³ in the upper basin of the Mahānadi. The kingdom of Śarabhapura had the Kalinga kingdom in the east and that of the Vākātakas in the south and west. It comprised the Southern Kōsala province and extended from Berar, across the Central Provinces, to Rewa in Central India;⁴ for one of the inscriptions of the dynasty refers to Mānapuram as, apparently, a capital established by the earliest king of the line and this village has been identified with Mānpur in Rewa. About half a dozen inscriptions of the dynasty are available. The Śarabhas did great service for the ascendancy of the Vēdic and paurāṇic type of Hinduism.

¹ Arch. Surv. Ind., Vol. XVII, p. 57 ff.

² Gupta Inscns., p. 193.

³ Prof. Dubreuil in his *Ancient History of the Deccan*, p. 78.

⁴ See note 6.

The list of kings, according to one record⁵ is as follows:—

Prasanna
|
Mānamātra
|
Mahāsudēva

Another inscription⁶ gives this genealogy:

Mānāṅka
|
'The ornament of the Rāshtrakūtas'
|
Dēvarāja
|
Bhavishya
(one of three sons)
|
Abhimanyu

It is quite probable that Mānāṅka and Mānamātra were the same, and Dēvarāja and Mahāsudēva were identical. From the fact that Mānāṅka is described as the ornament of the Rāshtrakūta family (this is the earliest mention of the Rāshtrakūtas), we may perhaps infer that the clan originally belonged to the Malked district from which the Rāshtras came. But the Rāshtrakūtas had a Garuḍa crest while the Śarabhas had the lion, indicating the connection to be uncertain.

It may be pointed out that, in or about the time of Sudēva, there was another king named Jaya whose connection with the genealogy given above is not known. He might have been one of the three sons of Sudēva. Prof. Dubreuil suggests that he might have been an elder brother of Bhavishya.

⁵ The Khariar Plates.

⁶ The Uḍivāṭika Plates.

The achievements of the individual kings are lacking in historical incidents. The earliest chief Prasanna is barely mentioned. Mānamātra founded Mānapura in Rewa and was probably, as has been already mentioned, a scion of the Rāshṭra family. His son Sudēva was undoubtedly a powerful sovereign. Four Copper Plate Charters of his have been discovered till now. In one¹ of these, issued from Śarabhapura in the second year of his reign, on Śravaṇa 29, he records the gift of two villages to a Vājasaneyin Vishṇusvāmin of Kausika Gōtra. In another record², issued from the same place, he granted a village in Tuṇḍaraka-Bhukti in the name of his queen and family to a number of learned priests of the Kausika Gōtra, one of whom was the donee in the previous record. A third inscrip-

tion, generally known as Raipur Plates³ and issued from the same town of Śarabhapura, says that the king gave in Māgha 9, in the tenth year of his reign, a village in the Pūr-varāshṭra (Eastern country) to two Brāhmanas.

All these records describe Mahāsudēva in a short passage of glowing colours. His two feet were washed by the waters flowing from the lustre of the crest jewels of the crowns of the Sāmantas reduced by him. He was the cause of the removal of the tresses of the wives of his adversaries! He was a giver of wealth, land and cows. The inscriptions use the same phraseology, but in a slightly less detailed form as in the Plates we have already studied. As has been already said, Mahāsudēva⁴ had a feudatory chief named Jayarāja who issued a grant from Śarabhapuram in his fifth year, endowing the village of Pamvā in the eastern country to a Brahmadēvasvāmin of the Vājasaneyā Śākhā and Kauṇḍinya Gōtra in the usual terms.

Nothing is known of Bhavishya, who might have been the immediate successor of, or joint

¹ This is the Khariār Plates published in Ep. Ind., Vol. IX, pp. 170—173, by Dr. Sten Konow. The two villages were Navannaka and 'Sāmbilaka in Khitimāṇḍa Ahāra. The first of these places is identified with Naina, three miles south of Khariār in the Raipur district, now known as Kariāl.

² This record was first published by Rajendra-lal Mitra in 1866 in the Jour. Beng. As. Soc., Vol. XXXV, p. 195 ff. Fleet did not regard this as quite reliable and therefore did not include it in his volume on 'Gupta Inscriptions.' It was later on recovered and edited by Mr. Hira Lal in Ep. Ind., Vol. IX, pp. 281—285, under the title of Sarangarh plates. It recorded the grant of a village named Chullandāraka in Tuṇḍaraka Bhukti to Bhāskaravāmi, Prabhākaravāmi, Barbhariśvāmi, Bōṭasvāmi, Dattasvāmi, Vishṇusvāmi, Phalgusvāmi, Svāmikīrttisvāmi, and Śaṅkaravāmi of the Kausika Gōtra. Mr. Hira Lal identifies Tuṇḍaraka with Tuṇḍra on the Mahā-nadi, 35 miles west of Sarangarh, the capital of a feudatory state in Central Provinces (now Bengal).

³ Edited by Fleet in Gupta Inscriptions, No. 41, pp. 196—200. The village granted was Śrīsāhikā in the Pūrvashāṭra (eastern country). Dr. Fleet did not identify it, but Mr. Hira Lal shows that it was Sirsahi, 25 miles southwest of Tuṇḍra in Raipur district (Ep. Ind., Vol. IX, p. 283). The donees were Nāgavatasvāmi and Bandhuvatsasvāmin of the Aupamanyava-Śākhā and Vatsa Gōtra, sons-in-law of Sāvitrīsvāmin of Kauṇḍinya Gōtra. The Dūtaka of the grant was Drōṇa-singha.

⁴ This is known as the Arang Copper Plate, so called from the village where it was discovered. It is in Raipur district. It is edited by Fleet in 'Gupta Inscriptions,' No. 40, pp. 191—195.

ruler with, Jaya. Bhavishya's son, Abhimanyu, however, has left a record¹ saying that, while staying at Mānapuram (Mānpur in Rewa), he made a grant to a temple at Pagāra near Pachmarhī, in Hōshaṅgābād district, Central Provinces. The donation was in the form of the village of Uṇḍikavātika and the donee was an ascetic named Jaṭābhāra, apparently a Pāsūpata priest, for the sake of the temple of Dakṣiṇa Śiva belonging to Pēṭha Paingaraka (Pagāra, as identified by Fleet). The grant is said to have been made in the presence of Jayasinha, the commander (Kōṭanigraha) of Harivatsakōṭṭa. Hultzsch identifies Uṇḍikavātika with Oontiya near Pagāra.

In the later period of the dynasty, that is, the beginning of the sixth century, it was apparently involved in the struggle between

¹ It is called 'the Uṇḍikavātika Plates' and edited in Ep. Ind., Vol. VIII, p. 163 ff. by Prof. Hultzsch. See also Ind. Antq., Vol. 30, p. 511, Note 16.

the Guptas and their enemies. The Eran Inscription (G. E. 191) refers to a Gōparāja, (the son of a Mādhava) who married the daughter of the king of Śarabha, who was an ally of Bhānugupta and who was killed about A. D. 510.

The Śarabha kings seem to have been votaries of Lakshmi; for their seals show a representation of the Goddess. She stands facing full front. On each side of her there is an elephant standing on a water lily and raises its trunk above Her head. In the right corner of the seal there is an expanded lily and in the left a Śaṅkha. While they had the figure of Lakshmi in their seals, the Śarabhas gave donations to Pāsūpatas also. The very term Śarabha indicates Śaivite cult. The Śarabhapura records reproduce the Gupta script and epithets and indicate the same spirit and culture. They popularised the Gupta civilization in this part of the country.

SCHOOLS OF TO-MORROW.

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(Continued from p. 504.)

NOTES OF LESSONS.

These notes of lessons are very essential to a beginner. If a beginner maintains a diary of his everyday work showing details whenever necessary, this will be a great help to him in after-years. In the succeeding years he can modify these notes by the experience gained in each year. He will do well to jot down in the notes the faults committed by children, the difficulties he experienced and the suggestions that had occurred to him for furthering his work. The preparation of notes and the jottings made

after the lesson will be a sure guide to him in the succeeding year. He will do well to note down reference charts and maps and books in his own notes which will greatly facilitate his work subsequently.

Only the first lesson in each subject will require elaborate notes, while the other lessons in the same topic will require only a few hints and jottings. The preparation of exercise-cards, or teaching aids and charts and maps themselves form part of these notes of lessons. In Arithmetic he will do well to chalk out a number

educational surrounding around them. It is not the object of the organisers to begin instruction in the Three R's at once. The children are engaged in occupations, story-telling, nature observations, walks and free plays and games. It will be very useful to introduce games and plays suitable for the learning of language and number ideas incidentally. It is in this Nursery school that these things ought to be practised and experimented. The children should be trained in good habits and cleanliness. It requires a specially qualified teacher, preferably a woman teacher, to attend to this class. One has to be assisted by some helpers who will follow and act up to the advice of the former. This part of the school requires to be thoroughly equipped with pictures, picture books, pictorial charts, toys, materials for free play and occupations. The children's social life should be made pleasant and happy. This is a centre of attraction for mothers interested in knowing the early training of children.

2. Education of Girls.

So far as the elementary school stage is concerned it is necessary to have separate schools, one for boys and the other for girls. The girls may be admitted in boys' schools and this is economically cheap. Except in the matter of some deviation in the methods of teaching certain subjects specially for girls such as music, hand-work, needle work, separate plays and games, the other things may be common to both boys and girls. Some women teachers may also be employed to take special care of girls and their education.

3. Special Teachers.

The single teacher school has been criticised to be educationally unsound as it is not productive of even fair results. It is a physical impossibility for a teacher to attend to children of varied ages and attainments. Even in a class of 30 of about the same age and attainments, it is not

possible to attend specially to the weak and the bright. It is however very necessary that a fully equipped school should have some extra teachers to look after some special forms of instruction.

1. Teaching of the subjects of General Knowledge.
2. Special Forms of Handicraft and works of art.
3. Helpers to the general work of the school.
4. Part time teachers for continuation classes for boys and adults.
4. *Adult School.*

A complete Elementary school has an Adult Education Class attached to it. This itself will form a part of the education of parents regarding the education of their children. The supervision of the school must be under the Head-teacher of the Day School. He may be assisted by the teachers of the Day School or by a special staff.

Though it is necessary that the teachers should take the initiative in forming and organising the Adult class, it will not be physically possible for them to do efficient work in the night time after their very hard work in the day. Such men who can give their life for educational work day and night are very rare and it cannot be expected of the generality of teachers to work for nothing after a day's work. Anyhow an Adult School is an indispensable adjunct to a well-equipped and well-staffed Day School for children.

CHILDREN'S CLUBS AND PARENTAL CONFERENCES.

I need not point out the value of these two to the school teachers. These subjects have been dwelt with exhaustively in previous issues of this Journal.

OLD BOYS' AND POOR BOYS' FUND.

A cordial relation with the old boys will facilitate the future working of the school especially

of the village school. These old boys ought to be invited for some of the important celebrations in the school, such of these who are by the grace of God placed in high ranks of life will be pleased to respond to the call of the teacher in some measure. I do not think there is any one who is likely to forget the first teacher from whom he learnt his first lessons. A Fund under the above name should be started by these old boys and with the collections it should be possible to look after the education of some poor children. The money could be used in giving a mid-day meal to poor children, presenting clothes once a year to the needy or offering some medical relief to the sick. It is a humane act and it worthy of the teacher's calling to take part in these beneficent organisations. In order to make the work more extended and useful, the teacher should get the co-operation of the leading men and well-to-do parents of the locality. Even a "Charity Box" could be kept in the school where visitors to the school may be approached to give some donation to the school. Thus whatever humane acts the teacher is doing, he is doing not for his own sake, but for the sake of those who are placed in a far unfortunate position than his own. It is the good heart that should be willing to give and undertake such extra duties connected with the school.

It sometimes happens that such a Fund is raised, but very soon the enthusiasm gets lost and the object remains unfulfilled. So much so the interest is dead and not living, whereas the teacher's interest for all his undertakings should be flowing as water in a perennial stream. The school is to be considered as a sacred place and any one who considers himself attached to the school has dedicated himself to the school and the village.

THE CONTRIBUTION OF THE SCHOOL TO THE RECONSTRUCTION OF THE VILLAGE.

1. Celebration of an Educational Week.

Each school, if it should win the hearts of the people of the village, must create a strong inducement to the public to join the activities of the school. Such an occasion as "the Dasara" or "the Navarathri" should be treated as an educational week. There should be an Exhibition of children's and teachers' work concerning education. This is a period during which the women-folk too freely come out and visit exhibitions of this kind. The time should be spent in holding a number of talks and lectures to the villagers on several matters concerning them—Health, Civics, Child Education, Local Industry, Agriculture, etc. Specialists who have given their whole lives to the above kind of activity should be invited to take part in the celebration and educate the village as a whole. The uneducated men and women and children should be made to take part in the celebration. The school day, or the school sports may be held on one of these days and one of the local men may be invited to preside on the occasion.

2. A Circulating Library.

By establishing the circulating library and attaching it to the school, the school authorities can do useful work in awakening the general knowledge of the public of the locality. Lectures, meetings and entertainments may be held under its auspices. A daily newspaper will be a valuable requisition to the library. Important news may be written on a "News-board" which may be kept hung in a prominent place. The children who have left off the school and taken to life must be made members of this library or the School Children's Club.

3. A Cooperative Society.

The teacher can take interest in running a cooperative society for the village. Very many

of exercises he could give the children under various headings in the scheme of work. Even for hand-work it would be useful to preserve the several forms of work done in the class showing the different stages or steps gone through before finishing the object. Here is just a specimen for a lesson on simple interest to Class 5. This could be improved by the teacher.

SIMPLE INTEREST.

Preparatory Talks.

1. Lease amount for cultivation.
2. Rent for house.
3. Hire for carts.
4. Tax for cleansing of latrine and cesspool.
5. Wages for work.
6. Ticket for travelling in a train.

For getting some benefit by way of enjoying lands, occupying houses, or travelling in a train or getting work we have to pay.

When we are out of pockets, and when we need money for our extra expenses and the like, we have to borrow money. When people have surplus of money they lend it out. The former pays some interest for the enjoyment of the money received from the latter.

A depositor deposits money in a bank and gets some interest.

The borrower borrowing money pays some interest.

The interest is calculated at a certain rate for a month for a 100.

When the amount is small, it is calculated at a rate per rupee for a month.

When we have to borrow large sums of money, the lender always requires some sureties or we have to pledge some jewels or valuables.

Rate of Interest. 3 pies per rupee per month.
6 pies per rupee per month.
1 anna per rupee per month.

The two latter rates are indeed very exorbitant. We should seldom borrow at such rates of interest.

In Funds they charge 1 pie, $1\frac{1}{2}$ pies or 2 pies per rupee per month.

In banks they give interest at 3 Rs. per year for a hundred which is gradually raised to 4, 5, or 6 Rs. per year for a hundred.

In all our household dealings we calculate interest at a rate for a hundred a month. Sometimes it is $\frac{3}{4}$ Re., 1 Re., $1\frac{1}{4}$ Rs. or $1\frac{1}{2}$ Rs. a hundred a month.

EXERCISES NEEDING REVISION.

- (a) How many hundreds are there in Rs. 300, 450, 350, 600, 750, 425, 575, etc.?
- (b) How many months are there in 1 year 8 months; 2 years 6 months; 1 year 10 months; 2 years 9 months; 3 years, etc.?

A Model Sum.—Kuppusamy Mudaly lends out to Parthasarathy Naickar a sum of Rs. 250 at Re. 1-4-0 a hundred a month. Calculate the interest which will accrue after 2 years 6 months. Find the total of principal and interest.

Steps —

Interest for Rs. 100 for a month is Re. 1-4-0.

Interest for Rs. 250 for a month

$$= \text{Re. } 1-4-0 \times 2\frac{1}{2} = \text{Rs. } 3-2-0.$$

Interest for Rs. 250 for $2\frac{1}{2}$ years

$$= \text{Rs. } 3-2-0 \times 30 = \text{Rs. } 93-12-0.$$

Principal and interest

$$= \text{Rs. } 250 + \text{Rs. } 93-12-0$$

or Rs. 343-12-0. *Ans.*

EXERCISES.

1. Velu Naickar borrows from Ezumalai Chetty a sum of Rs. 350, interest at Re. 1-4-0 for a hundred a month. He promises to repay the principal and interest after 1 year and 8 months. Find the total amount to be paid to Velu Naickar.

2. Narayanchand Sowcar lends Perumal Naickar a sum of Rs. 25 interest at 6 pies per

rupee per month. How much will Perumal pay the Sowcar after 10 months?

SUBSEQUENT NOTES.

(Mistakes Committed).

1. Finds interest for Rs. 350 for a month at Re. 1-4-0 a hundred and adds the same amount to the principal without calculating the interest for the whole period.

2. To be shown to children.

Examples of "On Demand" Forms, Sureties, witnesses, etc., signature on one anna stamp.

Examples of promissory notes.

3. To learn the indigenous methods of calculating interest.

THE TEACHER'S RECORDS.

Apart from the important document of notes of lessons there are other records which a teacher can usefully preserve for future reference.

1. Children's History—a note-book showing particulars regarding the children's parents, their occupation, home-life, health of children, their companions, etc.

2. School Records of children's progress.

These records of the actual work done by the child during Individual work periods can be preserved in the form of a file. The children's marks and progress reports may be attached to this file.

3. The practical work and hand-work done by the children should also be preserved.

4. The teacher can with advantage preserve the written work of the best boys in the class.

THE TEACHER'S PERSONAL RECORDS.

Apart from the school records each teacher will do well to have for himself some note-books such as

1. My children,
2. My school and holiday work;
3. My book of Jottings,

4. Hobbies for myself,
5. My Book-shelf.

In the first one he has on record the names of all the children who studied under him from the beginning of his career as a teacher. Whenever an old boy or girl meets him he will make kind enquiries about his or her welfare and note down in his book of "My children." Thus he can be in touch with a number of old boys.

In the second note-book he can note down the important things he was able to achieve for a year in the school and during the holidays in connection with educational work.

The third book is also a useful book where he notes some useful points for future guidance.

The fourth is another valuable one and each teacher must cultivate a special hobby for himself.

The last one will be a companion to him for his work in school and out of school. His "book-shelf" will surely be useful to the children during holidays.

In all these ways the teachers could keep up the interest with and for their children.

NEW DEPARTURES FROM THE OLD.

1. The Nursery School.

The School of To-morrow must be able to do something for the "under-fives." The saying that the education of the child begins at 5 must go and provision must be made in the school for taking and training children from 3 or $3\frac{1}{2}$ years to 5 years. "The Nursery School is as essential at one end of the system of public education as the University is at the other," says the Secretary to the Board of Education in England.

When once it is taken up it must be looked upon as a serious responsibility. The health and diet of the children have to be daily attended to since the development of the body and the mind should go together. The children should have an

distinguished teachers in the Presidency have been pioneers in the establishment of cooperative societies and it will be quite in keeping with the village teacher to start a similar society and run it on sound lines. Through the cooperative society he could start some useful industry in the locality making use of some available material in the locality and give work for some unemployed people or people trained in some work and leading miserable conditions. It depends upon the teacher's ingenuity in choosing the materials and convert them to useful articles. Such useful occupation may be combined with Adult Education also. If Education is not narrowed down to mere literacy and is made to mean "Equipment for life" then surely such living problems can be combined with education." We have known of cases where without literacy men and women have governed kingdoms or have been leaders of men.

The useful articles must also find a sale in the village or in the neighbouring villages or towns. The society may be located in a central village. The teacher can get the services of several men of the village to get orders for the articles manufactured. There is a tendency to undervalue or criticise some things locally produced. This attitude should disappear. There is also another thing, namely that some product of the village is taken to another village and converted into some useful article and sold cheap there, while at the same time if that article were to be manufactured and sold in the same place it is overrated. This attitude too should disappear. A small cooperative society within the school will enable the teacher to give the children a practical training in business and Arithmetic.

Through the cooperative society useful and saleable things may be purchased, stocked and sold in the locality and in the neighbourhood. People who are careful in accounts and who are thoroughly reliable with regard to dealings in

money should be made the secretaries of the society. The teacher can give his best help and thought to this useful concern. He will do well to have his books and stationery purchased through the society by making his school, himself, his children or their parents the members or shareholders of this society. Some materials useful for the education of children at home may also be stocked and sold.

A Savings Bank Department should be attached to the society. Children of the school and Adults reading in the Adult School may be allowed to deposit their daily, weekly, or monthly savings. Thus thrift should be encouraged. Especially before feasts and festivals children and adults get money from their relations but spend the same in luxurious ways. This may not apply to the generality of children who may be poor. Even in the case of poor boys deposits from a pie onwards could be collected. Very often children spend their pocket money in purchasing unwholesome and unhygienic estables. Teachers who happen to watch their children making such purchases should advise the children and tell them that they could better deposit the money in the Savings Bank than spend the same in getting unwholesome things. Thrift should be cultivated in the adult also. It would indeed be a nice thing if the adult too joins the Savings Bank and makes some deposits.

The Teacher's New Responsibilities.

From the foregoing pages it may be seen that the future teacher has new and growing responsibilities to shoulder. He is not only a teacher to children but he is also a friend of the poor, a companion to the parent and a guide to the villagers. Just as a man crossing a street full of water looks ahead and chalks out his path, so also the new teacher must look ahead, realise his new responsibilities and adjust himself to new situations cheerfully and courageously. His

work is no longer from 10 to 4 or any such scheduled time and he can no more say "I have no work hereafter and my day's work is over." The saying that a teacher's life is an easy-going one and is full of leisure is no more to be heard. He has to emulate his brother-teachers who have dedicated their lives in some of the sister institutions and working for all. He has to lead the proverbially contented life and by his industry weave out his own web of life. Above all in some humble measure he is doing a form of National Service.

The word "my" has a great charm attached to it. When we say "my house, my land, my child" we attach a love and an affection which is unexcelled. In the same way we have to cultivate the same affection and love when we can say "My school, My children, My village" and so on. By so doing we keep up our interest and increase the sacredness of our calling. When any one says "Your profession is noble," etc., we have only to take it in the light that the former is only reminding us of our own duty.

A teacher must always grow his interest in education. A lawyer gets his valuable training under his senior, attends court, hears arguments of learned members of his profession, keeps himself in close touch with important judicial cases through journals and magazines, etc. A doctor too gets his practical training under a renowned doctor, dispenses medicines, makes operations and keeps himself with the latest publications of drugs, etc. It may be said that in the case of these two professions, that because they are paying they have to be so. Even if it be not so in the case of education at present, the future education must develop by leaps and bounds in quality as well as in quantity and it is very necessary for us teachers to keep ourselves in touch with books and methods on education.

If we individually cannot do we can surely do it collectively. If we all form into an association

and take interest in our vocation we can certainly do it. In some central place there ought to be a teachers' club where could be seen the several teachers who are employed in and near the place. It will be possible for such an association to start a small library, send for some important educational periodicals and magazines. The little profit that may accrue to us in our cooperative concerns may be set apart for our own common purposes. By these means our associations should grow stronger than at present and be able to do better work for ourselves and for our calling.

Just as we are teaching we are also learning, and children help us a good deal in the search after knowledge. Shall we not give at least 10 minutes of our daily time in the early morning to think about our school and children? It is the fittest time for offering our prayers to God. Though poorest in wealth we hope to be rich in ideas. We shall not be sad we are poor. The poorest man in any vocation has to turn out the best part of the work. As we have to do the spade work of education it is not strange that we are naturally poor. At least one generation of teachers has to do this sacrifice. In taking new ideas we shall not say, "This is all known to me" but we should be able to say "I shall practise the same to the best of my abilities." We absorb the good from everything and evolve a new form of education suited to our own children and country and must be able to give to the other nations a true type of a New Education. There is no royal road to knowledge. The teacher is the method, the teacher is the mirror to the child and the teacher is everything. He is the Lord of education.

The Head-Teacher.

The term itself implies that he is a teacher first and a head afterwards. By his experience and learning he gives his valuable help to the teachers

who are on the look-out for his guidance and direction. He is the "heart of the school" and as such loves his work, the teachers, the children and others. He is the mediator between parents and children. By keeping his heart in the work he will never be satisfied with keeping a show and leading a shadow behind it, he will produce solid substance. Much of his routine work and attention to details will be lessened by the care and forethought with which he plans his work and assigns responsibilities to his teachers.

One who passionately loves truth, seeks truth and values truth will be able to get at the truth of anything. People are respected and loved on account of the truth in them. Harischandra, the incarnation of truth, is adored and admired not because he was a king but because he was a sufferer in the cause of truth and as such he was an embodiment of truth itself. Thus the principles of life are ingrained in certain personalities, and these great souls are doubly respected. A head-teacher of such a type is a valuable acquisition to the school. He visits the sick children, the sick teacher and encourages them. He is the father of the children who are weak in their school attainments and through his experience guides the teacher and the children. He takes in knowledge anywhere and everywhere even from his children and his teachers and always rallies round the teachers in upholding the nobility of the profession. By his love for getting at the truth of child education, he gives freedom to the teacher and children to experiment in new directions and applauds their success. Above all it is the man that ennoble the office and not the office that ennoble such a head. The new school throws greater responsibilities on the head and new situations arising therefrom must receive his careful handling and solution. In initiating, organising and working at new ways in education he respects the ripe experience of teachers who are equally interested in them.

Conclusion.

The future elementary school is just like the sun and spreads the light of knowledge in the village wiping out the darkness of illiteracy. Just as a man who plants a tree cannot expect to obtain the fruits of his labour himself, so also the teacher in planting the seed of New Education cannot expect to reap a harvest for himself. A single life's hard work in a particular cause is an asset to that branch of work. A single school working in this direction will be a pioneer in solving problems of universal mass education. A single individual who identifies himself with the work of the school will leave behind him a permanent record of his work to be developed and followed afterwards.

These are the findings of my heart. From the little book of experience in this direction I have given expression to some ideals of child education. It is meant to show the readers the changed attitude of the work and methods in, and the increased responsibilities of, the elementary school. It should be our duty to spread this changed attitude among parents and teachers and all those who have something to do with education. These ideals are practised even now in some schools here and there. But that is not sufficient. Children are recognised as an asset to the family and the State. Equally so are children's schools and teachers an asset to the nation. In maintaining the schools and teachers in an efficient condition so as to turn out good citizens, the money spent by the State and other philanthropists in the cause of education would have been well spent. I feel confident that at no distant date the suggestions and thoughts outlined here will become a matter of ordinary school routine in an Elementary school.

When such schools spring up in every big village, it can boast for itself to be a "Shanti Niketan" and the labours of the greatest men of the land will have borne fruit. Let me conclude by reminding the readers of the great motto 'Let us live *with* and *for* our children.'

MILK.*

BY MR. T. MURARI, B. SC., (OXON), F.L.S.

Live Stock Research Station, Hosur.

I AGREED to speak on MILK because it is the most important food for all mammals, including humans and it is of economic interest everywhere and in this country in particular. I have chosen this subject because I feel that in spite of the importance of milk in the human dietary, the public have not been well informed of its importance from various points of view.

To begin with, what is milk? Generally the secretion from the mammary glands from the female after parturition, that is, after calving in the case of a cow, is known as milk. It will be of some interest to you to know that this secretion need not necessarily be confined to the females nor mainly after parturition. There are data to show that males also have secreted a fluid which, for our purposes, need not be classed as milk. Again, heifers have secreted a type of fluid for some time before calving but it differs from the true milk in physical and chemical composition. In heavy milkers, which are not common in this country, milk secretion may commence either for some time or immediately before calving but that milk and the milk for some days after parturition is known as colostrum. This is again different to the normal milk. Colostrum is either a brownish, viscous honeylike

product or yellow non-viscous liquid and sometimes both forms exist in the same animal. It contains higher percentage of fat, and very high percentage different in composition to that in normal milk protein and has a laxative property, an important property necessary from the point of view of bringing up the young. The colostrum period may last even up to a week, the secretion gradually turning into what we know as "milk".

Broadly speaking, milk of all mammals resemble that of cow's milk in composition. The milk consists of fat in the form of globules of varying sizes, sugar, proteins, and minerals. The proportion of these vary, depending on species, breeds, the period of lactation, the individual and the environment. The milk of the cow, goat, sheep, buffalo, mare, camel, ass and the sow is used for human consumption. The milk of the sow, however, is confined to countries like Spain. In this Presidency, we are mainly interested in the cow, buffalo, sheep and the goat's milk. However, the composition of the milk of all the mammals mentioned above is given here for your information. I have also included the composition of human milk for purposes of comparison.

* Address at the Y.M.C.A., Madras.

		Water %	Fat %	Sugar %	Casein %	Albumen %	Ash %
Woman	...	88.50	8.30	6.80	0.90	0.40	0.20
Cow	...	87.32	3.75	4.75	3.00	0.40	0.75
Goat	...	86.04	4.68	4.22	3.49	0.86	0.76
Ewe	...	79.46	6.68	4.28	5.23	1.45	0.97
Buffalo	...	82.84	7.57	4.66	3.62	0.60	0.84
Mare	...	89.80	1.17	6.89		1.84	0.30
Ass	...	90.12	1.26	6.50	1.32	0.34	0.46
Camel	...	86.67	3.07	5.59		4.00	0.77
Sow	...	84.04	4.55	3.13		7.23	1.05

(DROOP RICHMOND)

As it is not the purpose of this talk to go into details with regard to the methods of analysis, I shall mention a few properties common to all the milks which are worth mentioning here. Milk generally absorbs dirt and odour easily and it is also a good medium for various types of organisms like the bovine tuberculosis to thrive.

Having given the composition of milk, it is not necessary to emphasise the importance of it as an article of food. It would, however, be interesting to put before you the value of milk as compared with other food-stuffs.

One quart or 2 25 lbs. of milk is equal in food-value to any of the following foods:—

10 eggs	2½ lb. chicken
15/16 lb. of lean beef	5 lb. oats
2½ lb. of potatoes	6½ lb. turnips
7½ lb. of spinach	5/24 lb. butter
8½ lb. lettuce	5/12 lb. wheat flour
5 lb. cabbage	5/12 lb. cheese
2½ lb. fresh cod fish.	

(From London Observer)

In addition, I may mention that milk is not only a suitable food from the point of view of caloric value, it also contains what we call vitamins. The milk contains abundance of vitamins A and some of B and D but little of C. As vitamins A and B are essential for growth, milk is the most suited food for growing children.

In Europe, America, Australia and New Zealand, much work has been done in milk problems. From the view point of food-value, interesting experiments and studies are carried in England with children in public schools, local schools and industrial centres. It has been found that public school boys get the best food, nearly 1/3 as much in caloric value of that provided for children in industrial areas. Experiments show that children getting a regular quantity of 1½ pints milk per day grow very much better than those receiving none. Again, there is an interesting case of twins who were separated and put in different environments through force of circum-

stances. One of these had a daily ration of milk while the other had either none or very little. The first one naturally grew to be a robust and active man while the other did not.

When such elaborate experiments are conducted and studied in European and other countries it would be interesting to have an idea of the type of milk supplied to the consumers in those countries. As we are connected with England intimately, I shall briefly mention the salient points with regard to milk supply in England and London in particular.

To begin with, milk should contain at least 3.5 % fat; else there would be legal proceedings taken against the farmer. In addition the following standards are required under the terms of the "Milk Special Designation Order."

The following are the standards required under the terms of the Milk Special Designation Order, 1923, for the various designations which it is illegal to use in connection with the sale of milk, except under licence granted by or under the authority of the Minister of Health.

Designation.	RAW MILK.			
	Herds.	Bacterial content.		Other conditions.
		Maximum number of bacilli per cubic centimetre.	Caliform bacillus.	
Certified.	Tuberculin tested and physically examined at regular intervals.	30,000	Absent in 1/10 cubic centimetre.	Bottled on the farm, name of farm, day of production and word "Certified" on each bottle cap.
Grade A Tuberculin tested.	Tuberculin tested and physically examined at regular intervals.	200,000	Absent in 1/10 cubic centimetre.	Delivered to consumers in (a) the bottle or the sealed containers as received from the farm; (b) suitable containers of not less than two gallons capacity; (c) bottles with the name of the dealer by whom the milk was bottled, the address of the licenced bottling establishment, the day of production and the words "Grade A—Tuberculin tested" or "Grade A" on each bottle cap.
Grade A	Physically examined at regular intervals.			
PASTEURIZED MILK.				
Grade A pasteurised.	Grade A milk that after pasteurization, as required by the Minister of Health, contains not more than 30,000 bacilli per cubic centimetre and no caliform bacillus in 1/10 c. c. All other conditions as required for Grade A milk.			
Pasteurized.	Any milk that after pasteurization, as required by the Minister of Health, contains not more than 100,000 bacilli per cubic centimetre. No requirement for bottling.			

It will be noticed that there are five grades of milk put in the market. You cannot imagine what a strong public opinion and demand there should be for as clean milk as can be produced; and you will be surprised when I say that one of the most busiest and perhaps most populous city in the world gets the purest milk possible, given at the very door if necessary. Now how does such a populous city manage to supply the citizens with such pure milk? I shall give in short, the working of an important organization which has undertaken this task. The organization is known as the "United Dairies." This company not only owns farms of its own, but also purchases milk from other farms regularly. They receive all the milk by train and motor lorries. It is extremely interesting to travel in the early hours of the morning and see how milk is transported to London for feeding its millions. All the milk received by train is unloaded at a station, convenient to a centre belonging to the United Dairies. The cans are then taken to the centre, emptied into weighing vats and the quantity credited to the supplier; the milk then passes through pipes for pasteurisation and thence to a most interesting place where the milk is bottled, labelled and got ready for despatch. There is another section for cleaning the utensils; the cans are cleaned and returned by another train and the empty bottles are thoroughly cleaned, washed and got ready for filling. There is also a laboratory for testing the quality of milk and a refri-

gerator for storing the bottled milk. It is necessary to add that the whole place is so thoroughly clean that it is impossible to find fault with the organization.

So soon as the milk is bottled, the most efficient workmen, pack lorries and milk carts without unnecessary shouting and other exhibitions often noticed in other countries and the lorries and milk carts soon go off either to the customers or sub-depots, probably some ten miles or more away. From the depot the milk is supplied to retailers and consumers as required. There are other organisations working under a co-operative basis taking to supply of dairy products.

So far, I have said mainly with regard to the distribution of milk. Now a word about Dairy Farming. In England practically all the dairy farms I happened to visit were run with utmost efficiency. The cows are rationed according to production; Tuberculin test is adopted in a number of farms for eliminating diseased cows. The pastures are generally rich and they are maintained scientifically. The cow byres are scrupulously clean and as soon as the cows come in from the grazing area, their hind quarters and udders are cleaned with warm water and dried. The hands are washed after every milking. Before milking, the teats are stripped on to the ground so as to get rid of dirt, etc., in the milk canal. Milk of each cow is weighed so as to note how much she produced, filtered and passed through a refrigerator and stored in a very cool

place. The utensils are cleaned thoroughly and covered milking buckets are becoming very common. When milking machines are used the milk is not touched by hand until it actually reaches the consumer.

It may interest you to know that the cow byres in Holland are practically attached to the homesteads. These byres are so very scrupulously clean that you would not notice any change in cleanliness between the drawing room and the byre. The Dutchman is so very particular that he even ties the switches of cows' tails to strings hanging for the purpose from the roof so that cows will not throw dirt into the milk.

Having given you a very rough idea of the method of milk supply to Londoners, I shall briefly compare the London Milk supply to that in this city. Contractors generally supply milk to institutions like the hospitals and the only organisation that is making an effort to supply milk in the city is the "Co-operative Union." They do not, and at present cannot, meet the requirements of the public in this city. The demand for milk has created what we call milkmen who keep a few milking cows and some buffaloes as well. You are no doubt aware of the conditions under which the animals are kept. The stalls, if any, except in a few notable cases, are in the most insanitary condition. You will note manure lying in heaps and in some places the lavatories will not be far from the stalls and it would not be surprising even if some of the

stalls themselves are used as lavatories. In the cases of milkmen who cannot afford stalls, the animals are left in the street and as you are citizens of this city, I need not say how very dirty the streets can be. The milkmen milk their cows either in their stalls or in the streets in front of their customers. Under the conditions mentioned, I cannot imagine how any pure milk can be produced. It is probably true that milk is boiled before use in this city, but it is very doubtful if it is ever pasteurised enough to be safe. It is not known how much of the mortality from diseases including consumption is due to the impure milk supplied in this city. In passing, I wish to state one point with regard to the method of getting milk from cows chosen by the customer; it may often turn out to be an animal suffering from some disease. It is therefore often safer to buy milk from mixed herd.

Having described to you the type of milk-supply you have, I shall very briefly say why such conditions as I have mentioned continue to prevail. Firstly the consumers themselves have not understood the value of clean milk and have not created any public opinion demanding pure milk-supply. The milkman, to do justice to him, is trying to meet a demand to the best of his abilities. It would not be easy to legislate for better milk-supply because the cost of milk production is likely to be doubled. The milkman cannot supply milk under hygienic conditions as it would be far

too costly for him. As it is, it is with utmost difficulty that he can make both ends meet. He does this mainly because he kills the calves soon after birth and disposes of the cow as soon as she goes dry, nearly always to the butcher. If cost of maintaining calf and cow during dry period are taken into account it will be noticed the milkman cannot make a profit. Even under the joint condition in order to lessen his losses he is forced to adulterate milk to the best of his ability which is by no means small.

Now under these distressing conditions, how is one to get a better supply of milk? One method is to improve milk cattle and evolve heavy milking strains. At present there is hardly a breed in this country which will give sufficient milk to make dairying really pay. Half-bred cows do help but even they do not give sufficiently large quantities of milk. However, the method of cross breeding is not understood by the ryot to adopt this method of breeding unless under controlled conditions. In either case it will take time and money either to create a sufficient number of crossbreds or evolve heavy milking strains. But this is the line the milkman of Madras is trying to work out.

In addition to this, there is only one useful method by which clean milk can reach the consumer with safety. You are no doubt aware that large quantities of condensed milk and dried milk are sold in this country. While condensed milk has to be finished soon after opening the tins, the dried milk can be

used for a longer period. The method of preparation of dried milk has sufficiently advanced in U. S. A. and England for us to recommend for large consumption. I know of cases where perfectly healthy children are brought up on dried milk. By advocating dried milk I do not advocate the produce of tinned articles from abroad. On the contrary I feel confident that in suitable localities where large dairy herds can be kept and in districts where cattle-breeding can be carried out with success, dry milk can be manufactured with success. I may add that milk problem is very acute in this country and it is high time that we solve the problem of supplying pure milk to our cities.

Before I sit down I wish to say just one word with regard to our children and youths. As you know the future of any country depends on its youths; unless we can produce robust, healthy men and women it would be difficult for this country to last out in the competition among nations. I know there is a great number of youth movements for both military training and physical culture. There are also more physical culture and games in schools now. I know also that this institution which has so kindly given me the opportunity to speak to you does a great deal of work with regard to physical culture. But what can any of these movements do to the youth if their nutrition is bad? I sincerely trust that this fact will be taken cognisance of and make it a rule that no member can join any youth movement unless he or she drinks at least $1\frac{1}{2}$ pints of pure milk per day.

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BY

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CONTENTS.

CHAPTER 1 Measurement of Length; 2 Measurement of Areas; 3. Volumes; 4. Measurement of Mass; 5. Density and Specific Gravity; 6. Principle of Archimedes; 7. Floating Bodies; 8. Liquid Pressure; 9. Transmissibility of Fluid Pressure; 10. Atmospheric Pressure and Barometer; 11. Liquid Pumps and Syphon; 12. Air-Pumps; 13. Water Wheels; 14. Centre of Gravity, States of Equilibrium; 15. The Measurement of Time—Simple Pendulum; 16. Simple Machines—The Lever and Wheel and Axle; 17. The Pulley and the Inclined Plane; 18. Block and Tackle—Jack; 19. General Effects of Heat—Expansion of Solids; 20. Compensated Pendulum; 21. Expansion of Liquids and Gases; 22. Temperature-Thermometry; 23. Special Kinds of Thermometers; 24. Change of State; 25. Quantity of Heat; Specific Heat; 26. Evaporation and Condensation; 27. Transmission of Heat; 28. Sound; 29. Light; 30. Reflection in Two Plane Mirrors; 31. Concave Mirrors; 32. Refraction of Light; 33. Refraction through a Prism; 34. Refraction through a Lens; 35. The Camera and the Eye; 36. Optical Instruments; 37. The Optical Lantern; 38. Magnetism; 39. Current Electricity; 40. The Electric Circuit; 41. The Electromotive Force of Cells; 42. The Magnetic Effect; 43. Electro-Magnet; 44. Applications of the Electro-Magnet; 45. Telegraphy; 46. Heating Effect; 47. Electric Lighting; 48. Chemical Effect—Electro-Plating; 49. The Electro-Motor; 50. Induced Currents; 51. The Dynamo; 52. Telephone and the Microphone. TABLES. APPENDICES.

CHEMISTRY

BY

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CONTENTS.

LESSON 1. What is Chemistry; 2. Some Common Apparatus; 3. Chemical Processes and Manipulations; 4. Physical and Chemical Changes; 5. Elements, Mixtures and Compounds; 6. Composition of Air; 7. Oxygen; 8. Nitrogen and some of its Compounds; 9. Water; 10. Composition of Water; 11. Carbon; 12. Salt; 13. Sulphur; 14. Phosphorus; 15. Some Common Metals and their more important Compounds; Revision Questions.

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OUR SCIENCE COLUMN.

BY 'SCIENCE.'

[The scope of these pages is limited to a collection of a few interesting and instructive bits from various sources on the wonders of modern science.]

TO KEEP FLIES OUT OF THE HOUSE.

An effective way is to take a small clean sponge and place it in a dish after dipping it in very hot water. Pour a few drops of oil of lavender on it. If the sponge is moistened about twice a day, flies will not come round as they dislike the odour.

AUTUMN LEAVES AS FERTILISER.

Autumn leaves have a definite commercial value which can be translated into money because of the chemicals they contain. The fertiliser value of the leaves is very great when applied to agricultural land. For, a ton of leaves contains 3 lb of phosphate, 19 lb of nitrogen and 7 lb of potash.

LEFT-HAND OR THE RIGHT?

Contrary to popular belief, experiments have revealed that the left-hand is a better feeler than the right. Blind people read raised type more rapidly with the left-hand. Psychologists say that the left-hand is used more than the right for feeling in the dark and for most other everyday operations where sense of touch is relied on.

A NEW ELECTRIC TESTER.

A wiring tester no larger than a fountain pen with a tiny lamp on its top is now on the market to locate burnt out fuses, electric light and motor troubles. It tests voltages from 100 to 400 volts in either direct or alternating current.

WRITING ON GLASS.

Writing on glass with black ink is usually not successful as nearly everyone has found, but it can be done with a solution of sodium silicate two parts and Indian ink twenty parts. Write with an ordinary pen of good quality.

NEW NEON LIGHT FOR AVIATION.

Fog is one of the greatest hazards to aviation but experiments have shown that the difficulty can be got over by the use of a new type of quartz neon gas-filled lamp. This lamp resembles a ball of reddish orange fire emitting all its visible radiations in the long wave-length and possessing high fog-penetrating power. This invention is bound to be a boon to aeronautics. Neon is one of the rare gases of the atmosphere.

* * * *

SPEED OF LIGHTNING.

The speed of lightning flash has been measured for the first time in history. It starts from the ground and the cloud at nearly the same instant and after $\frac{1}{1000}$ of a second later, the two ends unite in mid-air, thus completing itself.

* * * *

AN ENGINEERING FEAT.

In Pisa, Italy, there is a beautiful marble bell tower which leans over as if it were just about to fall to the ground. Yet it has stood in this position for hundreds of years.

This leaning tower is being undermined slowly by subterranean springs and engineers are busy finding a solution to keep the water at bay. It is suggested that the ground may be frozen with refrigerating machinery when a waterproof circular wall can be built around the foundation. When this is completed, it will be possible to force cement into the well so fashioned to stop the inroads of water.

* * * *

EINSTEIN AND RELATIVITY.

There are few people who have a very clear conception of the theory of relativity. One gentleman wrote that it could be understood better, if it is written in words of one syllable. Short words may be easier to pronounce but are not easier to understand. Yet here is an attempt.

"It is a matter of choice if we say that the earth goes round the sun or that the sun goes round the earth. It all depends on the point of view.

If you were in a train and saw a train on the side track slip by your pane of glass, you could not tell which train moved if yours did not jolt. You might think that this train was at rest and that that one moved back or that both moved but not at the same rate or the same way. The point is which way you looked at it."

If you are unable to learn anything about Relativity from the above illustrations, it is neither your fault nor mine because Eienstein's idea is hard to get at.

* * * *

THE STORY OF RUBBER.

The name 'rubber' was first suggested to the gummy substance of a tree by Joseph Priestley, the well-known chemist, in honour of its useful property of rubbing pencil marks from paper. In his day, a piece of rubber, eraser size, sold in stationery stores for 7s. 6d. Now hundreds of thousands of tons are marketed yearly and the producers find it difficult to keep the price up to 7d. per pound which they consider the absolute minimum for profitable operation of their estates.

In old days, when Science was not co-ordinated with Technology, discoveries in nature generally preceded their practical utilisation by years. It was particularly so with rubber. The earliest explorers of America saw Indians playing rubber-balls, wearing crude rubber footwear and using rubber in other ways. These were described later in books on travel and rubber came to be heard of in Europe only about 1735. Just then an expedition was despatched by the King of France to measure an arc of the meridian along the equator in South America. One of the expeditioners was Charles Marie de la Condamene, a man with the enquiring mind and observing eye of a true scientist. He reported to the French Academy of Science what he saw of rubber and even sent some samples. He gave the name *Caoutchouc*; the French spelling of the native name which meant 'weeping tree' or trees-tears.

Interest in rubber slowly awakened and Fresnan displayed some useful articles made from latex. Attention was directed to preserve the latex from coagulating in order that it may be safely shipped. Alkali was found to effect this process efficiently. The first patent relating to rubber was granted to Samuel Peal of England who used solutions of latex in turpentine for making waterproof fabrics.

Though considerable progress was made in the utilisation of rubber, the properties varied with a change in the thermometer. For example, a raincoat would become stiff as a board in winter or get soft and sticky in summer. If the wearer stood too near a fire, the rubber in his coat would even melt and run.

After years of patient toil and frequent discouragement, Thomas Hancock, an Englishman with a scientific turn of mind, overcame these difficulties. The process is now familiarly known as vulcanisation after the name of Vulcan, the Roman God of Fire. The process consists in heating rubber with sulphur to a suitable temperature when it loses its sensitivity to heat and cold. Rubber can then be given any of the properties, from extreme elasticity, as in rubber bands and inner tubes to form hard strength as in fountain pen barrels.

Hancock was most fortunate in this discovery. He made a good fortune and later he entered into a partnership with Macintosh, whose invention of a double fabric with rubber between the layers so popularised raincoats that the name 'Macintosh' persists even to this day.

Following the discovery of vulcanisation by Hancock in England and Good-Year of America, manufacture of rubber goods became a regular industry and an enormous amount of experimentation among inventors led to important advances in its technology.

During all this time, wild trees of Brazil supplied all the rubber. While Brazil shrewdly forbade exportation of trees and seeds, an young English explorer by name Henry Wickham is reported to have smuggled a large quantity of nuts which spread to Ceylon and British Malaya. These seedlings in Ceylon and Malaya were the ancestors of many millions of rubber trees now growing in the great rubber estates of the Far East. The hero of the adventure lived long enough (more than fifty years thereafter) to see the enormous growth of the rubber plantation and was knighted by the king for the exploit of his youth.

A rubber factory employs many chemists—analysts to control and maintain the quality of finished and raw products, compounders to find the best ingredients useful as softeners, solvents, dyes and accelerators and research men to make new discoveries—Enormous progress has already been made but much remains yet to be done. The rubber business can rightfully claim to be one of the major chemical industries of to-day.

Abridged from 'Popular Chemistry.'

P. A. N.



THE MADRAS UNIVERSITY AND THE SCHOOL FINAL MESS.

BY MR. N. KUPPUSWAMI AIYANGAR, M.A., L.T.,
Training College, Trivandram.

THE ABOLITION OF SCHOOL RECORDS.

ME twenty years ago the S.S.L.C. system was introduced partly as the result of the very serious complaints made against the old Matriculation Examination. It was realised at the time that a single external final examination was not a very reliable test. The system of taking into account the school records of a pupil in deciding about his merits was introduced. Now our University has abolished it and gone back practically to the old system. It would look as though the new system was tried and found to be bad. I believe the system did not have a fair trial.

It is agreed on all hands that the school record of a pupil is a better index of the pupil's ability and attainments than any other record that you can think of provided the records are made by a competent and honest teacher and in the proper way. Certainly the proviso is not an unimportant one. I take it that the teachers are as competent in their profession as magistrates, judges and other people are in their own. At any rate, it is the same teachers that judge the pupils in the public examination. Of course, there is nothing to prevent the University from asking for and having a more direct control in the selection of teachers. Even at present, they can indirectly determine the qualifications of a teacher through the L. T. Examination. So, incompetency cannot be and should not be a reason against considering school records.

THE PLEA OF DISHONEST PRACTICES.

To call a spade a spade, suspicion of dishonest practices seems to be the main reason for the neglect of school records by the University. Here, the action of the University is not consistent either with its own dignity or with that justice that is due to teachers. Is our University so perfect that it can afford to cast a stone at the teacher? Have we not heard of college professors who happened to be examiners also, giving out questions to their students even to the point of writing them on the blackboard? Have we not heard of examiners failing individual candidates on account of previous grudge or political opinions? No human institution is perfect. Teachers on the whole are as honest, if not more, as the members of other professions. We have not abolished law courts because there are dishonest magistrates, judges and lawyers. We have not abolished all trade because there are merchants whose practices are not particularly honest. We could not even plead that the effect of a teacher's dishonest practice is worse than that of a judge or a merchant.

This dishonesty of teachers may be of two kinds. A particular individual who does not deserve a pass may be made to go through. The only practical effect of this is that the teacher merely helps the parent to transfer some of his ill-gotten money—only such parents will or can influence the teacher—into the coffers of other people including those of the University. No other harm is done. The

college teacher and the University take care or ought to take care to see that the boy finds his level in the University.

The other possible variety of dishonesty is what is done by the teachers for the sake of the school. In order to get a reputation for efficiency the headmaster or the manager wants the teachers to manipulate the marks of the pupils in such a manner that a greater percentage of his candidates may get through the examination. Though the motive here is dishonest, the actual thing done is not far different from what the University itself does when it raises the percentage of passes on account of public agitation or for some other reason. Apart from the demoralisation that sets in by making the honest headmaster suffer for the manipulation of the dishonest, the main effect again is the same. A few foolish parents are allowed to spend some of their money on the University education of their boys.

I am not at all defending these practices. Both as a teacher and as a headmaster, I never allowed these practices. I have nothing but contempt for those who practised these methods. The fact that the teachers themselves wanted and approved of the abolition of the consideration of the school records shows that teachers as a body do not like these practices. They want to be honest. Only they feel they are not strong enough to withstand the influence of headmasters and managers. The remedy is not to abolish the thing altogether and go back to the most unsatisfactory method of judging pupils by a single final external examination. The remedy is to devise means and methods by which the teachers can honestly record what they felt to be true,

PROPER METHOD OF KEEPING SCHOOL RECORDS.

Very often the teachers considered giving school marks as a kind of ceremony which has got to be gone through somehow or other. The result was one or two examinations were held every year and very often the marks obtained therein were taken as the standard for fixing upon the class marks of the pupils. This method defeats the very object of giving school marks. The school marks are intended to indicate the progress and attainments of the pupils from day to day, week to week, month to month. That is why the class marks are more reliable than examination marks. There should be a large number of entries. The average of *a large number of entries* is much more reliable than the result of one or two examinations. So the school records are not worth much unless a large number of entries are made systematically, the entries being distributed more or less evenly throughout the year.

NO SECRECY IN MARKS.

Periodically once in a month or two both the pupils and their parents should be informed of the progress made by the pupils, preferably by means of progress cards. This will not only give both the pupils and the parents a chance of taking remedial measures if the progress is not satisfactory, it will reduce very considerably the possibility of dishonest practices. Secrecy is the breeder of dishonesty and publicity is the killer of the same. The alleged manipulation of the marks was made possible because the teachers and the headmasters were allowed to postpone giving the class marks or at any rate entering of these marks in the registers to the end of the year. To illustrate my

point, I shall give an instance that took place in one of the schools. A pupil got 73% or so in an examination. When the boy's certificate was handed over to him, he found his marks to be 50 and odd in that examination. When he asked the headmaster about it, the answer was "You have passed, what does it matter? Never mind." The manipulation is evident. Marks were taken away from those who got high marks and added on to those who were about the border line. This will keep down the school average and increase the total number of passes. This device was used to get round the University rule regarding the standardising of school marks, *viz.*, multiplying the school marks by the public examination average and dividing by the school average. This manipulation would have been impossible if the marks were entered then and there and communicated in writing to the parents or guardians. For this state of affairs the inspecting and directing authorities are not free from responsibility. If they did their duty properly the thing could not have happened. The inspecting authorities must make surprise visits to see whether the school records are adequate and up-to-date. The possibility of such visits and drastic action taken in cases of proved neglect are quite sufficient to keep the teachers honest. In fact the teachers themselves would welcome such visits. The teacher is very often an unwilling partner in this affair. These visits will be a source of help to them in their attempts to keep themselves above temptation.

Again, there is nothing to prevent the University from appointing their own inspecting officers solely for this purpose of seeing that there are a large number of entries, they are distributed more or less

evenly throughout the year and the entries are then and there made and the registers are kept up-to-date. The expense involved is a legitimate charge on the income derived from the matriculating of candidates. Therefore the abolition of school marks altogether is a counsel of despair not consistent with the prestige of a learned body like the University.

STANDARDISING OF SCHOOL MARKS.

It may be admitted that school record is the best index of a pupil so far as his ability and attainments relative to those of his class-mates under the same teacher are concerned. But can we say that a pupil getting 50% in school A is equal in ability and attainments to another getting 50% in school B? Some teachers may have very high standards and others rather low. Something may be done to equalise the standards in different schools through the training given to teachers in the Teachers' Colleges. But the personal equation cannot altogether be done away with if we do not use standardised objective tests. It is partly because of this, the principals of colleges were allowed discretion in the matter of admitting candidates to college courses. In a large number of cases the principals of colleges know what the schools are that serve as feeders to their colleges. It should not be difficult for them to get acquainted with the standards prevailing in those schools. In other cases it should not be difficult for the principal to devise simple tests to see whether the boy's marks correspond to his ability and attainments. The public examination results and the statistics connected with the same will also help the Principal in appreciating the standard prevailing in a particular school,

Secondly, by taking the average of a large number of entries, the effect of almost all the other sources of inaccuracy is minimised except that of a particular teacher giving uniformly high marks and another uniformly low marks. To obviate this difficulty, rules like the ones devised by the University to standardise class marks are good enough. The rules did not work well not because they were not reliable but because of dishonest manipulation of marks. If it is made possible for teachers to be honest and made impossible for headmasters and managers to be dishonest, which, as I have shown, is not a difficult thing to do, the rules would work satisfactorily enough for the purpose. But

perfect results could be got only by the introduction of standardised objective tests throughout both in school and in public examinations, at any rate, for the purpose of testing the reliability of the marks given otherwise.

Thus it will be seen, though there is a case for improving the methods of giving class or school marks, there is no case for abolishing the consideration of school marks altogether. By abolishing the consideration of school records altogether, innocent boys are punished for the incompetency of the controlling authorities.

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"THE GLORIES OF ANCIENT INDIA."

BY MR. J. S. THOMAS CHELLIAH, B.A.

Megnanapuram.

THIS is the ancient land in which culture, wisdom and civilization were born and nursed up properly before it was sent to any other country: the same India whose extra influx of spirituality is represented on the material plane by the rolling rivers like calm oceans where the eternal Himalayas rising tier after tier with their snow caps as if prying into the very mysteries of heaven. This is the sacred land whose soil is blessed by being trodden by the feet of the greatest sages that ever drew breath. Here first arose the doctrine of the Immortality of the Soul, the existence of a Supervising God, an immanent God in Nature and in Man and it is here the highest ideals of religion and philosophy have reached their culminating points. It is of the past glories of such a land that I am going to speak. The Indians are accused often for looking back into the past and not forward into the future. It is said that looking back only degenerates and leads to nothing. But let me tell those gentlemen that out of the past is built the present and the future. Look back therefore as far as you can, drink deep of the eternal fountains that are behind and after that look forward, march forward and make the mother-land much greater than she ever was. It is with the object of inculcating into you a love for India that I have come to speak to you today. It is correctly said that India suffers today

in the estimation of the world more through the world's ignorance of the achievements of the heroes of Indian History than through the absence or insignificance of such achievements. It is therefore clear on the very surface that there is something admittedly great in the past of India and it is our duty to study them.

In the intellectual history of the world India occupies a distinguished position. Our literature is an ancient and time-honoured one. "Knowledge to their eyes her ample page—rich with the sports of time did ever roll." "When the foremost nations of today were swimming in the sea of barbarism our forefathers possessed a beautiful literature. Even before 315 B.C. they had the three famous Sutras, the four Vedas, the two great epics,—the Ramayana and the Mahabharata—and volumes of minor literature. What a treasure-house of wisdom are the Vedas! By Vedas we do not mean only the Rig, the Sama, the Yajur and the Atharvana. The Vedas are without beginning and without end. This may sound ludicrous to many; they only mean the accumulated wisdom of spiritual laws discovered by different persons at different times. Just as the law of gravitation existed even before its discovery and would exist if all humanity forget it so it is with the laws that govern the spiritual world. Such is the interpretation given by

Swami Vivekanandha before the august assembly, the Parliament of Religions, at Chicago, in his epoch-making address. Students who go through the Ramayana and the Mahabharata could not but be arrested by the imagination of the authors, the choice of words and the fluidity of the style. Their loftiness of thought, splendid dignity of expression and rhythmic felicities need no comment. In the realm of poetry and drama our ancestors have reigned supreme. If England could boast of a Shakespeare, Germany of a Goethe we with equal pride could boast of a Kalidasa. Goethe who wrote so much on the plays of Shakespeare was so much overpowered when he went through Kalidasa's "Sakuntala" that he said that he was at his wit's end to say anything by way of appreciation and only wrote: "I name thee Sakuntala, and all at once is said." When non-Indians call our Kalidasa, the Indian Shakespeare, why should not we in turn call Shakespeare the English Kalidasa. What Homer is to Greece, Dante to Italy and Milton to England, Valmiki and Kambar are to us. Our epic poetry stands in no way inferior to the epic poetry of any other nation. Poetry and drama received a remarkable development during the reign of King Vikramaditya. Kalidasa, included in the Nine Gems, adorned his court. Then again in their treatises on grammar the Hindus surpassed all nations of antiquity. Hunter says of Panini's grammar: "It stands supreme among the grammars of the world, alike for its precision of statement and for its thorough analysis of

the roots of the language and of the formative principles of words."

During her long career of prosperity, religious and philosophical questions have chiefly engaged the attention of her learned sons. What honour is overdue to our forefathers who at such a remote age had the conception of one God, the Transmigration of Souls, the Theory of Karma, and the Immortality of the Soul! They were quite thorough with the six Vedantas and the famous six systems of Philosophy. They believed in an immanent God in Nature and in Man. "God is much in Nature and more in Man" was not unknown to them. Logic was their favourite study. The two most celebrated treatises on it are those of Gotama, the founder of the Nyaya School of Philosophy and Kanada. The Hindus are distinguished in arithmetic by the invention of the Decimal Notation and this gave them a great advantage over the Greeks and the Romans with their much cumbrous system. Magic Squares were constructed in India before the Christian era and were taken to Europe by Moschopolus in the 15th century. They were acquainted with certain geometrical problems which were not known out to Europe till the modern times. Great was their knowledge in astronomy too.

Then with regard to their skill in medicine and surgery we know that when Alexander the Great came to India the Greeks found the Hindus skilled in the treatment of diseases which defied the skill of their own doctors. The

two standard works on Hindu medicine and surgery, those of Charaka and Susruta, were compiled about 315 B. C. Metallic drugs were administered internally in India long before the Arabs borrowed the practice from this country and introduced it into Europe in the Middle Ages. The earliest Arabian writers on medicine mention in their works the name of Charaka. In the Gupta era (about 375 A.D.) we come across free hospitals for men and beasts, with healing herbs medicinal for men and beasts, throughout the length and breadth of the kingdom. Of this Dr. Vincent Smith says: "No such foundation was to be seen elsewhere in the world at that date; its existence anticipating the deeds of modern Christian charity speaks both for the citizens who endowed it and for the genius of the great Asoka." The earliest hospital in Europe, the Maison Dieu, of Paris, is said to have been opened only in the 7th century.

India may well be termed "The Land of Religions," not a land borrowing religions from other countries, but giving birth to them in her very womb and sending out her off-springs to other countries. Buddhism had its birth in India. Soon it grew up to be a big tree and her branches were planted in Ceylon, Tibet and the distant China. Jainism was born in India. Coming to the reign of the great Akbar we find another religion deliberately made by a combination of all the then known religions. Din-i-elahi—for that was the name of the new faith—

the eclectic pantheism, was the court religion in the days of Akbar, but the death of its founder gave it the death blow and it followed his corpse to the grave and never returned back to human occupations. An ancient legend connects the name of the apostle St. Thomas with an early attempt to evangelise India. There is also evidence in favour of the statement of early writers that about the year 193 A.D. Pantaenus, the head of the Catechetical School at Alexandria, went to India as a missionary. India is the hope of the world in matters religious and spiritual. That is why a western lady (Dr. Annie Beasant) said: "Indians are the one people among all the people of the globe; and if the Indians, the last hope of the life of the world, give everything to matter, the hopes of the world are destroyed and in the spiritual death of India the hope of the world shall find its grave." It is this hope and a true vision that made the poet Tilak to write:

"At the end of the pregnant strife
Enthroned as the Guru of the Earth
This land of Hind shall teach the worth
Of Christian faith and Christian life."

Even in the earliest times India was in touch with the other countries of the world. They enjoyed an extensive commerce. This is borne out by certain codes in "Manu's Code" and certain phrases and similes from the Rig Veda. Foreign curiosities were given to Dharma on his coronation day. The wives of Rama and Laxmana were wearing sarees brought from China. The writings of Merivale declare that in 20 B.C. a certain Pandya

king sent a mission to Augustus Cæsar. About 100 A.D. Ptolemy, the great geographer, is informed of the markets in the Pandyan kingdom. The precious cargoes of Solomon's merchant ships came from the coast of ancient Malabar. The wealth of India induced Alexander the Great to open up communication between his Persian dominions and India on the one hand and along the Red Sea and Alexandria on the other. India was the commander of a ship engaged in trade which resulted in the discovery of the Monsoons and some other important principles of navigation. It was the silk sarees of India that adorned the person of the Roman ladies. Cæsar in all his greatness was wearing a shawl got from India. Such was the greatness of Indian commerce in those remote days.

Then about manufacture. The Vedas show that the Aryans were not strangers to the use of iron and the crafts of goldsmith, coppersmith, blacksmith, carpenter and other artisans. Like the ancient Egyptians they had their chariots of war drawn by horses and also ordinary conveyances drawn by both horses and bullocks. They knew how to turn metals and precious stones to account, for they had their golden earrings, golden bowls and jewel necklaces. We also hear that even in those remote days our ancestors roofed and floored their houses with iron plates. Steel manufactured in India by means of wood is still of the finest description. It was used in the manufacture of the famous Damascus swords and in modern times it has been used for mak-

ing surgical instruments where great delicacy is required. Weaving was not unknown to the ancient Indians. This we know from certain similies in the Rig Veda and certain sections in the Code of Manu. The officers of Alexander the Great state that the Indian males wore dhoties and their women long sarees and tight jackets.

Then to Indian fine arts. In weaving they had attained such a high degree that they were able to manufacture fine silk, yards and yards of which could be placed in a match-box. These silks went by the name of "The Evening Dew," "The Gentle Breeze" and the "Flowing water." The last was so named because it was invisible when placed in water. The daughter of the Great Moghul Aurangzib is said to have worn seven such sarees one over the other and yet her limbs were seen through. The Cashmir shawls are famous even to-day. The carpets made in those days were very beautiful because one could see on them the most beautiful scenery and other beautiful objects of Nature. Their workmanship is exemplified in the Peacock Throne now with the Shah of Persia. The nobles in the court of Vijayanagar wore on their caps flowers cut of diamonds. When the Prince of Wales came some years back a certain goldsmith of Conjeeveram carved the exact face of His Royal Highness on a single grain of rice. There were certain pavilions (Pavilions) at Vijayanagar which were arranged in such a manner that they could turn rapidly round and present a new face at

each movement. At every turn a new hall or a new chamber presented itself to view. There was also a room all of ivory, as well the chamber as the walls from top to bottom and the pillars of the cross timber had roses and flowers of lotuses all of ivory and all well executed so that they could not be better. Such is the verdict of Peas, a Portuguese writer

About the ancient Indian architecture we can say with Dr. Fergusson, a competent authority, that it is thoroughly original and absolutely without a trace of foreign influence but quite capable of expressing its ideas.... For an honest purpose like the pre-Raphaelite kind of art there is probably nothing better to be found anywhere." The grandeur and splendour of the palace of Asoka was such that the Chinese pilgrim Fa Hein has recorded of it: the palace is built "in such a way which no human hands of this world could accomplish." It was supposed to be executed by supernatural agency. Kanishka built at his capital Purushapura (modern Peshawar) a great relic tower which seems to have deserved to rank among the wonders of the world. The superstructure of carved wood rose in 13 stories to a height of at least 400 feet, thus rivalling the modern skyscrapers of America. Of the Mauryan palace, it is said, that it excelled the palaces of Susa in splendour and magnificence with its gilded pillars being adorned with golden vines and silver birds. Peas saw at Vijayanagar a round temple made of a single stone. The reign of Krishna is memorable in

the annals of Indian History for the execution of the most marvellous architectural freak in India, the Kailasa Temple at Ellora, which is by far the most extensive of the rock-cut shrines, imposing in its solid grandeur. Then what about the much talked of, much admired Taj Mahal which is ranked with the six other wonders of the world. Every day it receives into its boundary streams of admirers from all parts of the world! It is needless to tell you anything about the beautiful temples at Madura, Tanjore, Srirangam, Conjeeveram and ever so many other towns in India.

India taught Europe not only to pray but also to play. Most of the modern indoor games in the civilized countries were imported from India with less intricacies. Dice is mentioned in the Rig Veda. Elaborate accounts are given in the Mahabharata of the way in which King Nala and Yudhishtira gambled away their kingdoms. When we come to Chalukya's famous Arthasastra we find the prototype of the latest product of legislation in England, viz., the Betting Control Board and the Superintendent of Gaming. Sir Clement Hindley fills almost the exact position. Chess has been played from the earliest times in India and is reported to be invented by the wife of Ravana, King of Ceylon, in the 2nd age of the world to amuse her lord while Rama besieged the metropolis. "The Knight's Tour," a trick by which the knight could be made to cover every square on the boards was known even then. What is more, a book, though

old, found recently in the Jagan Mohan Palace contains numerous varieties of this by which the moves of the knight can be arranged so as to draw all sorts of figures of trees, buildings, birds, and animals. According to the theory of Sir William Jones the Indian Chaturanga or the game of the four kings led to the invention of playing cards in which the four Kings with similar retinue—Queen, Jack, etc.—again find a place. There is another tradition which ascribes the invention of cards to the Brahmins and that the Crusaders who were inveterate gamblers carried this game from Asia to Europe. This is supported by the fact that in the earliest pack of cards that were introduced into England the Court or the coat cards bore the images of Eastern Gods. The English game Homeward Bound is called in Canarese Tagadi and was played in India with many more intricate rules before it was taken to Europe. The game of Jivan Mukthi or the play of Heaven and Hell has penetrated into English nurseries under the name of Snakes and Ladders. The game Pad-mavyuha must have given the idea of the English game, the Pigs in clover. The English game Fox and Geese is a derivative of the more intricate and interesting Huli Kuri, an ancient game in Malabar. These are only a few among the many instances of India teaching Europe to play.

It was the wealth of India that brought so many foreigners to her soil either in the costume of traders or invaders. Let me only quote an unbiassed foreign writer. The Chronicle of Fernas Nuniz, a Portuguese writer, contains the

following: "All the service of this house (palace), with the things which they make use of is of silver and gold. The bed-steads are worked with large seed pearls. The King never puts on any garment more than once; and when he takes it off it is given to the department which keeps it. In the streets of Vijayanagar live many merchants: and there you will find all sorts of rubies, diamondsand every other sort of thing there is on earth and that you may wish to buy. The nobles wear caps, on them they have flowers made of large pearls; collars on the neck with jewels of gold richly set. There was a cot suspended in the air by chains of gold with so much setting of precious stones and with cross-bars covered with gold. It had all round it a railing of pearls a span wide. Certain roofs and halls in the palace were entirely formed of plates of gold enriched with precious stones. Each of these plates was as thick as the blade of a sword and was fastened with golden nails ... I cannot possibly describe it all, nor would I be believed if I tried to do so. Truly I was so carried out with myself that it seemed as if what I saw was a vision and that I was in a dream." The letter of Nicholo De Conti, an Italian, informs us that the City of Vijayanagar "is 60 miles in circumference. In this city there are estimated to be 90,000 men fit to take up arms. Inside the palace royal there are 34 streets. The city of Bidyanagar (Vijayanagar) is such that the pupil of the eye has never seen a place like it; nor the ear of intelligence has ever been informed that there existed anything equal to it in the world." Pataliputra, the capital of the Mauryan Empire, was 9 miles long and 1½ miles broad, defended internally by massive timber palisades pierced by 64 gates, crowned by 750 towers and protected externally by a deep broad moat.

Though it may be thought little could be said with regard to their government

because it was a complete personal autocracy with the king at the apex let me tell you that the form does not matter, but the spirit does. To you who live in these days of democracy the autocracy of our forefathers may seem a bad form of government. Autocracy is not itself a bad form of Government. For forms of Government fools contend but that which is best administered is the best. What could be said more to the glory of the ancient monarchs than to cite of the mere fact that they treated their subjects like their own children. Their municipal administration deserves much credit. The Municipal Council of 30 members was divided into 6 boards of 5 members each. It was an official development of the non-official panchayat. The boards dealt with industrial acts, foreigners, statistics, trade, small manufactures and collection of tithes. They did not shut their eyes to the importance of national defence and from time immemorial we get the traditional four parts of the

Indian army—Infantry, Cavalry, Chariots and Elephants—What is more important is we hear of a war office in the Mauryan Government and in that office they had 6 boards—the traditional four parts plus the admiralty and the transport.

In conclusion let me mention certain peculiar institutions of our fore fathers. The keeping of the Amazonian ladies, the massaging of the body of the king with ebony rollers, the Horse sacrifice, the weighing of the King against diamonds and precious stones on special occasions, the burning of the widows with their deceased husbands, the burying of the widows with their dead husband and the caste system are certain institutions obtained in India.

I have spoken much longer than it was expected of me or I intended to speak. But if I have aroused in you a love for the mother-land I have not spoken in vain.

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DAY DREAMS—THE WRONG AND THE RIGHT KIND.

BY MR. K. APPASAMY, M.A., B.D.
Hindu College, Tinnevely.

EVERYONE day-dreams. From the time a child is born to the time it dies as an old man, day-dreams are a part of his mental make-up. We are all familiar with the story of Alnascar in the Arabian Nights. He was given a small sum of money. He bought a basketful of glass-ware, and sat down in the bazaar to sell it. He dreamed he would sell it with fifty per cent. profit, and invest the whole thing again in new stock. By a series of such sales he would get wealthy. When he had plenty of money, he would build himself a palace and then ask for the hand of the king's daughter in marriage. Of course, she would be given. But if she did not behave herself he would kick her thus and off went the basket and its wares. There is a similar story in England. A milkmaid was walking with a pail of milk on her head for sale. Her father had asked her to sell it for say a shilling. But she began to day-dream. She thought she would sell it for a shilling and tuppence ha'penny and turn in only the shilling to her father and keep the change to herself. In the course of a few days when these tuppence ha'pennies amounted to enough, she would buy herself a hen. The hen would lay eggs. She would sell the eggs and would buy herself ribbons and make a pretty cap with it and put it on her head. All the young men who passed her by, would then look at her. Then she would toss her head with a pert, defiant air. But alas! the toss of her head spilled all the milk she was carrying.

There are various names for this kind of thinking: castle-building, day-dreaming, autistic thinking, etc. In all these, the dreamer himself is the hero of the dream. Things which do not ordinarily happen in the world occur to him. The unsatisfied desire expresses itself in the

shape of such dreams. It is a free play of the imagination of the mind. Some people even go to the extent of saying that novel reading is only another kind of day-dreaming where you use material that is already there and where very often you could work yourself into the position of the hero. Of the day-dreams the worst kind are erotic dreams; where one thinks of kissing and hugging a person of the opposite sex. Jesus Christ said, you know, if you look at a woman with lust you have already committed adultery with her. An exceedingly strong statement, but it is true. The thought is the father of the wish, the wish is the father of the action.

There was once a swift short river which rose up in the Western Ghats and ran its destructive course of 50 miles down a deep declivity till it reached the sea. It was no good to anybody. But some engineer projected a plan of diverting the river along the Madura side. After a good deal of persuasion and red tape the Government patronised his scheme. Now that same body of water fertilises a vast area all along its 300 mile course. Several dry lands have been converted to wet lands. This dynamic energy of mind, this capacity for day-dreaming could also be directed into fruitful channels. Just as there is a "small still voice," the conscience in the moral field, there is a "censor" in this mental field. When our day-dreams get beyond the range of possibility then the censor rings his alarm bell. Heed that warning and turn the energy that is going to waste into usefulness.

Great men in all fields have been day-dreamers. They have never been ashamed to tread on unbeaten tracks. Every great inventor has turned his day-dreams into useful articles for the world

and capital for himself. Edison had to his credit several such popular paying inventions. The gramophone, the laboratory manufacture of cement, the photographic film, the cinematograph, the dynamo, the electric light, the storage battery, the cyclostyle and a host of other things have been the product of his imaginative day-dreaming. If we take the field of literature, people who have analysed say there are only 39 possible original plots. But by a permutation and combination of these, men of letters have been able to hammer out of their brains millions of novels, poems, plays, etc. Big statesmen like Disraeli and Akbar have been the greatest day-dreamers. Disraeli dreamed of an Empire in the East but it was not easy to direct an Empire *via* the Cape of Good Hope. Ferdinand De Lesseps had built the Suez Canal with funds of a company most shares of which were held by the French people. Disraeli cautiously set about and purchased fifty-one per cent. of the shares. On one of Queen Victoria's birthdays this day-dreamer presented the Queen and the Empire the key to their Eastern Empire. If you care to know about the dreams of Akbar and how he brought the Mogul Empire to its height, read "The Prince of Dreamers," a novel. Pioneers have always been day-dreamers, Columbus for instance.

Solomon said three thousand years ago: "There is nothing new under the sun." The same old fundamental human passions exist to-day as in his day. The same world with the same metals exist. It is only out of a combination and recombination in different proportions of these existing materials that we have been able to produce such a multiplicity of things for our comfort. The difference between a good day-dreamer and a bad one lies in whether one is able to create a new combination out of old existing material.

Since it is a power to combine materials we should have first materials to combine together. Before any new combination is made concrete, it is made in the abstract. Therefore the brain should have plenty of materials. Such data from books, newspapers and personal observation, could be collected and stored in the brain. Imagination is

a series of images like consecutive images in a roll of cinematographic film. The stronger the impression the better the picture. The images that should be stored are of various kinds, namely visual, auditory, motor or kinaesthetic, tactile, gustatory and olfactory. When we go to a wedding we see the procession, the bride and the bridegroom before the altar, the return, the reception, the distribution of pan-supari, etc.; these are impressed in the form of visual images. If we go to a concert, bars, snatches, songs, sometimes the sonates, are impressed in the brain so that we could mentally trace the vibrations in the air. These form the auditory images. When we have spent a month or more on board a ship, even after we land we feel under our feet the rise and fall of the deck and in some cases even the throb of the ship's engine. That is motor image. A good feast with all its delicacies leaves a lasting gustatory image. A class-mate of mine, Imogene, used to soak her handkerchiefs with perfume of the trailing arbutus. Now whenever I come across the smell either in the natural flower or in somebody's handkerchief it at once awakens in me the memory of the pert and saucy Miss Imogene.

We are all the time collecting this kind of raw material for imagination in the shape of images. One who wants to make use of them must see to it that these are strong images, vividly impressed in the mind. Side by side with collecting such images one should exercise the brain. If there has been a municipal election, or a new law passed, or a scandal in town think over it. Think over all the possibilities of it. Pass your own judgment on it. If you had been in a position to regulate, think what you could have done to better it. Always approach the problem with a sympathetic attitude. Every once in a while set your reproductive imagination at work to see if all that you have read or observed or received in the shape of images are strong. See if you can repeat a novel you have read without losing the trend of the story. Try the same with an incident in life. Last but not the least important, set for yourself an ideal and still high enough. Make a series of small ideals which will eventually lead on to the big ideal in life. Let me illustrate myself. If we want to win a Tennis match we have to win points, games and sets. These points, games and sets are the small and near ideals leading on to the big ideal—the winning of the match.

PLACES OF EDUCATIONAL INTEREST—II.

CONJEEVERAM.

BY MR. L. N. GUBIL SUNDARESAN,

Teppakulam, Trichy.

WITH temples dedicated both to Siva and Vishnu, Conjeeveram, one of the seven holy cities of India, lies on the bank of the river Vegavati, 45 miles from Madras on the Chingleput-Arkonam branch line of the South Indian Railway. One of the most ancient cities of South India, it has been the seat of various cultures. Not only Saivism and Vaishnavism but Buddhism and Jainism had their stronghold in the city. The capital of the Pallavas, who built Mapabalipuram and of the Cholas, inscriptions are met with in plenty in most temples supplying materials for making out the history of the ancient kings of various lines. The town is of unique importance in that, of the seven holy cities, it is alone sacred both to Siva and Vishnu, while three are sacred to Vishnu and three to Siva. The famous Chinese pilgrim, Hsien Tsang, is said to have visited this city when he came to India about the seventh century.

It was in this place that the great Sri Sankaracharya established his "KAMAKOTI PEETA" and it was in this place also that the able exponent of Vaishnavism, Sri Ramanuja, and the profound scholar, Sri Vedanta Desika, lived and preached.

What all is now left of the old grandeur is the existence of many temples and of the four broad streets known as the Rajah Streets. Conjeevaram is divided into two parts, one called the Big Conjeevaram or Siva Kanchi and the other, the Little Conjeevaram or Vishnu Kanchi.

As the principal objects of interest consist in its temples it is a chief centre of pilgrimage in the Deccan resorted to by a large number of pilgrims not only from South India but from North India also. In the month of April, when what is called the Brahma Utsavam is celebrated in the Saiva temple of Ekambaranatha Swami which contains the celebrated Prithvi-Linga, one of the five famous Lingas of South India and in the month of May when a similar festival is celebrated at the Vishnu temple of Sri Varadaraja Swami thousands of pilgrims flock together to get a glimpse of the God taken out in procession.

The earliest Hindu temples of the place, noticed in the *Thevaram* and *Nalayaira*

Prabandam, are the temples of Ekambaranath and Kailasanath and those of Pandava Perumal, Vilakkoli Perumal, Ashtabhuja, Ulagalandha Perumal, Varadaraja and Vaikunta Perumal. The place is also famous as one of the three chief places of Sakthi Worship, famous as the place where Sankara is believed to have subdued the power of Kamakshi who, in the form of Kali, is supposed to have been doing havoc to the people at nights.

Among the Saivite temples, the temple of Kamakshi Amman is the most important. The peculiarity in this temple is that, whereas in all Hindu temples the sculptural representations of the Goddess rest on Chakra, Yantra or Peeta, in this temple the Chakra is placed in front of the idol. The temple of Ekambaranath contains a mango tree and is considered to be very sacred because it is supposed that Siva appeared to Parvathi under this tree when she prayed for Him here. The third Saiva temple is the Kailasanath temple where there is a figure of Ardanariswara. This temple is constructed on a peculiar plan having a series of cells with sculptures on each.

Of the Vishnu temples, that of Varadaraja is the most important. The main shrine stands on a hillock called Hasthigiri (the elephant hillock) and unlike in other temples the God is facing West due to the fact that he Presented Himself before Brahma, the creator, who performed a sacrifice to this God facing East. It contains a hundred pillared Mandapam of exquisite workmanship and the long stone chains carved out of one stone hanging at the corners of this Mandapam are worth seeing.

One of the oldest temples of this place is Sri Vaikunta Perumal temple which closely resembles the Kailasnath temple.

This place, sanctified by the songs of Thirugnana Sambandha, Appar, and Sundaramurthi among Saivite saints and Thirumangai Alwar, Peyalwar, Poigai Alwar and Thirumalisai Alwar among Vaishnavite saints, is well worth a visit specially during the month of May when the Brahmotsava of the Varadaraja Swami temple is usually celebrated.

REVIEWS AND NOTICES.

PROJECTS IN INDIAN EDUCATION—EXPERIMENTS IN THE PROJECT METHOD IN INDIAN SCHOOLS, DESCRIBED BY VARIOUS WRITERS AND EDITED BY ALICE B. VAR DOREN, B.A., WITH INTRODUCTION BY WILLIAM H. KILPATRICK, (ASSOCIATION PRESS, CALCUTTA.) Price Re. 1-4-0.

We accord a hearty welcome to this handsome little book which gives an account of practical educational experiments conducted in different places in India, of which a map is provided in the book. We are perhaps apt to feel impatient on hearing about a new educational method. We know how each method is taken up, pursued vigorously for a time and then dropped. Of course wherever the forms survive with the obscuring of the original aim it seems a relief to pull down the so-called methods and start everything on first principles. We heard of the Direct Method in language teaching and when it was ridden to death, the Dalton Plan came into prominent attention. The 'Project' is the latest American idea. Piece-by-piece work has to be allotted to the pupil under the Dalton method. But in the 'Project,' the purposes are to be planned spontaneously by the pupils themselves. Of course the task of the teacher is very important. The 'Project' aims at adapting the education of the elementary school (for a beginning) to the needs of each locality. Both on the artistic and on the industrial sides there is plenty of scope in each locality to form its own 'projects.' It is not only these but the very living things, like food and domestic science, which offer plenty of scope for educational work of the greatest usefulness. The book mentions the school at Moga in the Punjab and that at Udupiddi in Ceylon as two chief centres of the Project Method. It is the cultivation of these special methods, while all the time they go simply on the oldest educational principles, that gives us evidence of

vitality in the educational system and we once again commend the present contribution to Indian educational literature to all who are interested in Indian education.

MACMILLAN'S DIRECT READERS BY GEORGE ROBB AND M. M. SAKR. PRIMER 1. PP. 32. (MACMILLAN & CO., LTD.) Price 8d. PRIMER 2. PP. 32. Price 8d.

These are prettily got up readers prepared by educational officers of Egypt.

MORE PEOPLES AND OTHER LANDS, BOOK II. BY C. MADGLEY, M. SC. (W. & A. K. JOHNSTON, LTD.) PP. 121. Price Re. 1-0-6.

This book pursues the idea of taking the child round the world to study the different peoples. Africa, China, Japan, America and countries of Europe are represented in this book. The illustrations are an attractive feature of the book. The story is told in simple language and questions suggested at the end of each lesson must be helpful for school use.

MARIUS THE EPICUREAN, ABRIDGED AND EDITED BY E.A. PARKER, (ENGLISH LITERATURE SERIES, No. 130) (MACMILLAN & CO., LTD.) PP. 3 + 148. Price 1s. 9d.

This is a laudable attempt to make Pater, regarded usually as a difficult stylist, accessible to the junior students of literature. The story of Marius, as offering mainly a description of life in Rome in the second century, should serve to stimulate the curiosity of the young reader.

STORIES OF INDIAN YOUTH, PART II, BY E. L. TURNBULL. (LONGMANS, GREEN & CO., LTD.) PP. 102.

It is refreshing to find in this little book for young pupils accounts of the modern heroes and

heroines of India, the stress being laid on the earlier part of their lives. Jamssetjee Jeejeebhoy, Toru Dutt, S. Ramanujan, and Pandita Ramabai are among the names included in this book, which are representative of the different parts and the different communities of this country.

ENGLISH PROSE SELECTIONS, BY E.C. DICKINSON AND DIWAN CHAND SHARMA. (MACMILLAN & CO., LTD.) PP. 228. Price Rs. 2-6-6.

This is one more compilation of prose passages for consumption in reference to Indian University examinations. Many nineteenth century writers are represented in the book with a sprinkling of living writers, Lucas, Priestley and Alington. The

selections are simple enough to be suitable for the Intermediate course in our colleges.

THE STUDENTS' MANUAL OR PRECIS-WRITING, SECOND EDITION, REVISED AND ENLARGED, BY J. P. EARNSHAW, F. C. I. S. (EFFINGHAM WILSON, LONDON). PP. 150. Price 3s. 6d.

This book was originally printed in 1919. The first two chapters explain the principles of precis-writing (first eight pages) with worked examples (Pp. 9-54). Exercises are provided over about ninety pages and model ways of writing the precis are also shown at the end. In these days of the public examinations for clerks, the present book will be found useful.

CHITTOOR BOARD HIGH SCHOOL TEACHERS' ASSOCIATION.

The Inaugural Address of the Association was delivered by Mr. S. Satchidanandam Pillai, B.A., L.T., Headmaster of the Govt. Secondary Training School, under the kind presidentship of Janab Muhammad Sahib, M.A., LL. B., District Educational Officer. Almost all the teachers of the B. Z. Secondary School, Govt. Training School and the Sherman Memorial Girls' School were present. The subject was the "Demands of Modern India on our Schools." In the course of the address, he said that the aim of education must be preparation for life and that for a valuable life in view of the complex modern situation and the urge for internationalism, (the apostle of which is an Indian, in the person of Sir Rabindranath Tagore) social efficiency, as an ideal, is worth striving for in schools, lest the products turned out should degenerate into clogs on the wheels of social progress. What amazed the lecturer most was the moral decay fostered by the

franchise. How to arrest it was a tough problem. The value of the franchise should be properly understood and exercised. Again, in schools, the training ground for life's career, character-building should be attended to and to this end, Scout organizations and co-operative societies should be set up. Moral Instruction as at present imparted was a sham and required over-hauling. If possible, the elements of each religion might be imparted to the pupils.

The Chairman in his concluding remarks agreed that very few schools turned out real men of good character. He referred to the wastage in schools and advocated a change in the ideals of the profession. The teachers should be charged with a missionary spirit. "Teachers were jewellers and pupils uncut diamonds." No emphasis on character training could be too great. The function terminated with the usual vote of thanks.

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A TEACHER OF ENGLISH GRAMMAR AND COMPOSITION

BY SIMHADRI APPAYYA,
 late of the Maharajah's College, Vizianagaram.

Vol. I. Price : Re. 1.

(Approved as a Text-book by the Department, May 1914.)

SRINIVASA VARADACHARI & CO., 190, MOUNT ROAD, MADRAS.

THE LONDON TIMES EDUCATIONAL SUPPLEMENT, AUGUST 1ST, 1931:—

"Anyone who studies the Indian provincial educational Press will admit the relative superiority of Southern India in the number and variety of its educational publications. The oldest existing periodical of the kind is the **Educational Review**, published at Madras, which is now in its thirty-eighth year. Mr. Thomas Denham, of the Mysore Educational Service, was the first editor, and has been followed by a succession of able men."

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All literary contributions, books for review, newspapers, or magazines, sent in exchange, &c., should be addressed to the Editor, No. 190, Mount Road, Madras. Articles and communications intended for publication in the succeeding issue should, as far as possible, reach the Editor not later than the 20th of the month. The Editor solicits contributions on all subjects of educational interest. Stamps should accompany the MS., if the writer wishes it returned, in case of non-acceptance. The Editor can in no case hold himself responsible for accidental loss.

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THE EDUCATIONAL REVIEW.

The year's address at the Convocation is notable as being the first that has been delivered by a lady. Dr. McDougall was well-qualified from her long experience as Principal of the Women's Christian College to fulfil the responsibility of exhorting the graduates to conduct themselves worthily as members of the University.

The Madras
 University
 Convocation.

The function of the University in the body politic will always bear repetition and Miss McDougall said: "By imparting relevant knowledge indeed, but much more by inducing a certain attitude of mind, by instilling a certain habit of intellectual activity, the University strives to train its *alumni* to a distinctive way of doing things." The "attitude of mind" is clearly that of the cultured mind by

which a man cannot fail to evince interest in all that pertains to human life and activity. It is that by which he learns to harmonise himself with his surroundings, however alien those surroundings seem to a less educated mind. It is finally that by which his civic sense is developed in the most healthy manner and by which he offers his fruitful co-operation for the fulfilment of the common objects of welfare of society. The "habit of intellectual activity" should seem to be another mark of University education. The capacity for sustained intellectual work is ordinarily limited in the uncultivated human mind. In India where the population is alive to the enervating effects of a hot climate, the capacity for intellectual work is short-lived, senility overtaking many persons at varying ages. "The habit of intellectual activity" as the gift of a University training becomes more than ever necessary in India.

Miss McDougall followed up with a definition of the member of a liberal profession as a person who is free from bondage to absorbing personal desires and ambitions. It calls for what should seem a disinterested pursuit of the profession. This 'disinterestedness' really shapes general demeanour and etiquette to be observed in the various professions. The lecturer also pleaded for the maintaining of high standards in education.

What Miss McDougall said about women is of special interest. Madras has reason to be proud of the rapid advance in women's education.

Both the colleges for women in Madras have been filled to their maximum capacity. Miss McDougall rightly pointed out that the University helped the women not by "humiliating and weakening privileges but by a frank welcome to meet its ordeals and stand its tests." She was thankful for the admission of women into the colleges for men for the Honours courses, as the women's colleges have not yet instituted them. Miss McDougall has suggested that the women issuing out of the University should engage in fashioning the right type of education for girls all over the country. This is as it should be. It is only the experience of the women themselves that must be greatly helpful in devising a proper system for the members of their sex. But beyond this, Miss McDougall has not meant to emphasise the need for a marked differentiation in the education of the two sexes. She has said: "By treating you for the time being as if you were men the University has given you the mental training of which women have stood so greatly in need, strengthening the will and clearing the mind, teaching lucidity, candour, and courage, and conferring a wide outlook and a balanced judgment." The problem of the present and of the future is the means of increasing the openings for women. The problem is acute in England where places in the Civil Service are sought to be obtained for women. Women have had to agitate for equal pay with men for functioning in the same offices. In this province women have been in advance over those

of other provinces in the exercise of civic and political privileges, but already the disqualification of sex is telling severely on several of our educated women. Not very long ago the news reached us of the appointment of a Parsee lady to a professorship at the Elphinstone College at Bombay. We do not know if this will prove a successful experiment. The natural reserve which is bound to come in, in the social relations between the two sexes may handicap the professor from being unreservedly useful to the students and the students from seeking the unrestrained sympathy and guidance of the professor. But we know of numerous women in this presidency who have acquired a distinguished University record both here and in England, and who cannot fill places to which they would be entitled, if they were not women. We should have had several women filling chairs at the Presidency College, for instance, if their sex had not debarred them from doing so.

The annual reports of Queen Mary's College and of the Lady Willingdon College are of great interest. The strength of Queen Mary's College has increased steadily from year to year. It was 186 on the 31st March 1931, and this number has grown to a higher one in July. The College presents a most enviable and marked feature, of having for Principal the same lady practically for all these years from the time of the starting of the institution. Miss de La

Hey has been indefatigable in guiding the College to keep up a high standard of efficiency. She has been so strict in the class promotions that her students have fared extraordinarily well in the University examinations. Some of the students also obtained a high rank in them. The opening of a swimming bath and of the B.A. classes in Indian Music have been noted to be special features in the year.

The Lady Willingdon Training College is an institution of large dimensions. The training classes are of three grades and the practising section has been steadily growing in strength. The applications for admission in all classes have been much larger than the actual admissions. 73 had applied for 36 places in the L. T. class. There were 62 pupils in the Sixth Form class. The results at examinations have also been satisfactory, 33 out of 36 passing in the L. T. and 22 out of 33 in the S.S.L.C., the presidency percentage having been much lower. Of educational experiments, that of 'practical activity' in the lower school has been a great success. 'The teaching of basketry, spinning and weaving in addition to needle-craft has given a new impulse to the ordinary school work.' Seven graduate students took domestic science as their special subject in the L. T. course.

We have always felt that complete autonomy is the great desideratum of education. We remarked lately in these pages on the prospect of

Two Colleges for Women.

Women's Education.

industrialists assuming the direction in the field of education. At the other extreme lies the artist. How far is the artist competent to guide education? He may of course be able to supply the omissions which an industrialist is apt to leave, but there are obviously faults which an artist also may commit. It is with such anticipations that we read an account offered by the poet Rabindranath Tagore recently in the pages of the *Modern Review*, of "My Educational Mission." The poet is pleased to call the ordinary school, "the education factory" and he thinks that lessons are pelted at the children like hailstones on flowers, so that the sensitiveness of the child's mind to the influences of the world is not availed of for his natural acquisition of knowledge. He next speaks of the tyranny of teaching English to Indian pupils. (The poet leaves us absolutely unconvinced.) The circumstance of choosing a beautiful spot far away from town for a school, as Tagore has done for his, is after all a trivial circumstance in the great process of education. It is questionable whether it is wise to take away the school from the town, which is the real atmosphere of life. It is of great interest to read in this connection what Sir Daniel Hall has said recently in an address at the Manchester Grammar School. It was conventional to praise the public school at the expense of one situated in the midst of a city. But the public schools are not without their defect as "in their well-deserved pride and self-sufficiency lies a danger. They

are societies apart, which impress upon their members a scale of values of their own in which the prime purposes of the school learning finds little part." The advantage of a city education is quite clear to Sir Daniel and he insinuates also against the limited character of the experience of life at a public school. "By daily contact you get to know how people live, your acquaintance with that large majority of British folk, the weekly wage-earners, is not confined to domestic servants and cricket professionals."

Is Tagore enunciating a practical proposition capable of solving the national needs in praising the beautiful and free atmosphere which he says he has provided in his school? The poet writes about the beauty of nature and of its call on man. He has written songs to celebrate the coming of the different seasons. The children are so free that they can give up a lesson at any time to go out and make themselves happy. Then the children are encouraged to help their neighbours. There is a cosmopolitan outlook cultivated, we learn, at Tagore's school. Then there is reference to an idealism which is lacking in the mere exercise of an intellect. We are afraid beautiful writing is often mistaken for valuable writing. We do not feel that the poet has made out his case convincingly for the distinctive excellence of his own school. No institution which calls for extraordinary protectiveness can ever take root. The sense of beauty in nature, the love of freedom and idealism are all words which are elusive in

their connotation. Those who are not content to build strongly on the prosaic virtues of truthfulness, steadiness and patience cannot be the right directors of education. If the industrialist will help to make man a soulless mechanism, the artist may equally tend to make a morbid ineffective creature of him.

Since writing last month we have had some news of this event, to be present at which so many representatives from Indian Universities

The Empire Universities' Congress.

have proceeded to Great Britain. In his Welcome Address, H. R. H. the Prince of Wales referred to London taking the role of the educational clearing-house of the empire while she had been all along the financial clearing-house. The idea of the Conference was of course significant of British statesmanship which would strive to impart to the political cementing of empire a basis of every form of moral principle. In tracing the evolution of the Empire Universities, the Prince pointed out that a hundred years ago the number stood at eight. In 1912, the year of the first of the Universities' Congress, the figure was fifty three, and it is now seventy. In the words of the Prince, "With the growth of our population, our commerce, and our national wealth, has grown the need for advanced education, until nearly every great city possesses its University." He believes the Universities are responsible to a great extent for the education, the training and the formation of the character of the men who are needed to fulfil the higher tasks

in the empire. He is also anxious for an increasing application of modern science to industry. He no doubt reflects the national temper of the time when he urges that University education should be adapted to the needs of industry and commerce where an early start in the profession is most desirable.

An important discussion at the Congress concerning India was about Indian students at English Universities. Sir Thomas Holland, Principal and Vice-Chancellor of Edinburgh University, read a paper on "Facilities for Overseas Students in British Universities." The failure of many Indian students in England is caused, he pointed out, "by the distractions of a strange social as well as a new academic atmosphere." The number of students who start on courses in Great Britain and who fail to complete them, is appalling. It is a waste which we in India can hardly afford. By way of figures it was mentioned that 425 overseas students were entered at Edinburgh in the Faculties of Arts and Sciences. The British students secured 92 per cent. of the success while the foreigners only 56.5. India fared better than others getting 66 per cent. (162 out of 246) as against 62 of the Egyptians and 39 of those from the Far East. In medicine Indians secured only 44 per cent. as against 81 of the British.

We congratulate Rao Bahadur S. E. Ranganathan, Vice-Chancellor of the Annamalai University, on making a

marked contribution to the discussion of the subject. He mentioned the number of Indian students in Great Britain as 2,000 divided almost equally between law, engineering, medicine and technical and scientific and commercial or art subjects. Mr. Ranganathan agreed that only post-graduate scholars profited most by going abroad. He however wanted to impress on his audience that the quality of the Indian student had steadily risen within recent years. The report of the High Commissioner for India had shown that the great majority of the Indian students are qualified to undertake professional or advanced scientific and technical training. Mr. Ranganathan pleaded for an adequate recognition of the value of Indian degrees. It was absurd, for instance, that a second class Honours man from India should be asked to sit for the Intermediate examination in England to qualify for admission into the B.Sc. course. Mr. Ranganathan pleaded finally

that the British Universities should be considerate enough to admit Indian students into all the social privileges side by side with the purely academic rights, so that they might have the opportunities of meeting the best types of British men and women.

Since writing on this last month, we learn that the head of Retrenchment. the Education Department has formulated definite proposals, among them being the abolition of such old institutions like the Rajahmundry and Kumbakonam Colleges. We cannot certainly congratulate the Director on this. He has certainly missed the spirit with which he should have sent up proposals. Instead of trying to cut down items of extravagance he has proposed the closing down of old and invaluable institutions for the education of the country.

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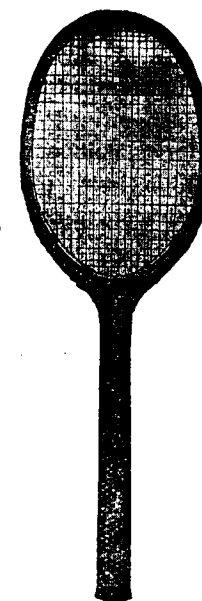
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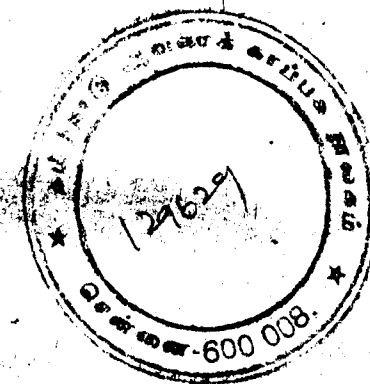
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