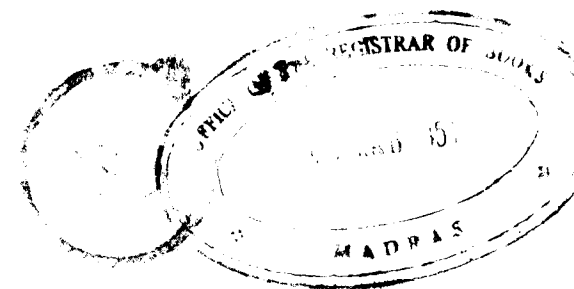


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# The Madras Medical College Magazine

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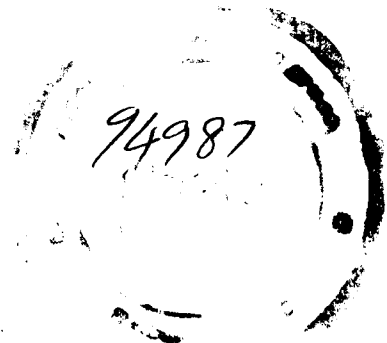
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★ Our cover page depicting Mercury taking flight, is a reproduction of Giovanni Da Bologna's world famous masterpiece, in bronze.



.....Oh! suffering world;  
 Oh! known and unknown of my common flesh,  
 Caught in this common net of death and woe,  
 And life which binds to both! I see, I feel  
 The vastness of the agony of earth,  
 The vainness of its joys, the mockery  
 Of all its best, the anguish of its worst;  
 Since pleasures end in pain, and youth in age,  
 And love in loss, and life in hateful death,  
 And death in unknown lives, which will but yoke  
 Men to their wheel again to whirl the round  
 Of false delights and woes that are not false.  
 Me too this lure hath cheated, so it seemed  
 Lovely to live, and life a sunlit stream  
 For ever flowing in a changeless peace;  
 Whereas the foolish ripple of the flood  
 Dances so lightly down by bloom and lawn  
 Only to pour its crystal quicklier  
 Into the foul salt sea. The veil is rent  
 Which blinded me! I am as all these men  
 Who cry upon their gods and are not heard,  
 Or are not heeded—Yet then must be aid!  
 For them and me and all then must be help!  
 Perchance the gods have need of help themselves,  
 Being so feeble that when sad lips cry  
 They cannot save! I would not let one cry  
 Whom I could save! How can it be that Brahm  
 Would make a world and keep it miserable,  
 Since, if, all powerful, he leaves it so,  
 He is not good, and if not powerful,  
 He is not God?

Mr. L. A. Muthu, IV year).

—SIR EDWIN ARNOLD.

# Editorial

---

AT midnight on 31st December, the Church bells were ringing. A new year had begun and a significant fifty years, the earlier half of this century was over. In the west, scientists worked hard all these years and set the wheel of progress move faster, and faster. Their politicians planned wars in closely guarded rooms and threw seeds of destruction on the face of this earth. But we of the east, we have just been sightseers of this passing show. Let the clouds gather over us, let the storms blow around us, let fire rage amidst us and floods take their toll, we will slumber on, too much engrossed in ourselves to notice the change. Under the winter quiet at the Korean front there is smouldering fire. In the Capitals of two mighty nations, opposed in ideologies and immersed in their differences, they are planing destruction. Yes, to-morrow if they will, they can strike the death knell to human inhabitation in this world. There are seers in the east and they predict the end of this world. They do not take their own prediction seriously for it is their means of livelihood. We do not know what is going to happen to humanity, and we do not care. We have our own little thoughts to bother us.

Sometimes when we sit and think, the problems of the world recede to the dim distance. Our main worries are our little problems, the little changes that take place in our surroundings, little stories and little scandals about ourselves and our big examinations and bigger examiners. Of vital importance to us is our cup of coffee at the canteen and our daily talk revolves around the new Hygiene block, rising up brick by brick, like the walls of Athens "rose slowly to a music slowly breathed." Now and again the talk turns to cricket which at present has been elevated to national importance by all authorities concerned. Our only restlessness is in our changing fashions. The old order of coats yielded place to the new order of bushshirts and now to the newer order of slack shirts. But one thing never changes, the man inside the dress. Old wine is served in a new bottle. And so be it with our magazine.

It has been said that much of our college magazine is unreadable and the rest is not read. All that I know is, this page is never read, for the editor is one of the fortunate who is never taken seriously. My thanks are due to those who have helped me in bringing up this issue. I am very grateful to Dr. D. S. Iyer, for the kindhearted help that he always extended to me throughout my tenure of office.

*P. K. Ramaswami.*

OUR PROFESSOR OF MIDWIFERY

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Dr. R. K. K. THAMPAN, B.A., M.B.B.S., D.G.O., F.R.C.S., F.R.C.O.G.  
who was elected to the Fellowship of the Royal College of Obstetricians and  
Gynaecologists, England.

# Medical Education

—Dr. D. GOVINDA REDDY, M.D.

THE medical student of today is not only the future doctor, but also the shaper of the destiny of medical education. Being so, it is but fitting that he should take interest in the medical education from now. In the editorial of the Souvenir of the first All-India Medical Students' Conference recently held in Madras, the students have expressed "In our country all of us deplore many features in our education, but unfortunately nothing is being done towards a complete reorganisation of medical education which is long overdue. The Bhore Committee report is yet to be implemented. Can it be that we are still feeling that everything is in order? It cannot be so." I am glad that the students have preferred the path of labour and sacrifice to that of ease and comfort. They have courageously expressed their views, and I know that our leaders who are toiling to reform medical education to suit and advance medical relief will not misconstrue these as hasty remarks. At the outset, I like to acquaint my young readers that their views and desires are not new; reforms have been effected from time to time and there are very many difficulties in the path of the contemplated changes, as it requires a large amount of money and trained teachers, which even the advanced countries are finding it difficult to meet.

A little over twenty years back, when I was a student in this institution, it never occurred to me or to many of my friends that medical education required reforms. Subject to correction, medical students of my day took the passive role of actively cramming text-books and equipping themselves with materials to satisfy examiners. To-day both the teachers and the taught all over the world are not satisfied with the existing system of training medical students and feel that medical studies should be reorganised. Eminent medical men have formed committees and

discussed at length about the changes to be effected. One such report is that of the Inter-departmental Committee on Medical Education presided over by Sir William Goodenough. The British are proud of this report. In the wake of the above report, we have in India the Bhore Committee report of which we are equally proud. It would not be possible within the limits of this short article intended for the under-graduates to describe and discuss in detail the proposals of the Committees for the reorganisation and reform of the education system. The principal aims which underlie the Committee's recommendations are that of providing medical students with a University education on broad and liberal lines which, while primarily practical in character, would give them a clear understanding of the constantly developing scientific basis of medicine and in which the main emphasis would be on the inculcation with fundamental principles and methods rather than on the implanting of a mass of purely factual knowledge. Other independent bodies both here and abroad which have gone into the medical education have reinforced the view expressed by the Goodenough and Bhore Committees. I have read through many of them, but was very much impressed with the report of the Royal College of Physicians on Medical Education. I wish to refer to four paragraphs from the "British Medical Journal" of May 13, 1944, commending the above report (Royal College of Physicians).

"The old pipe-line theory of education in which the student is regarded as a passive and distensible receptacle into which more and more facts are poured is out-of-date....."

"It is fundamental that the students should be taught method and principle rather than facts. Only in this way can the University provide the doctor with discipline and an instrument which will allow him to adapt himself to rapid advance of scientific knowledge and to maintain a progressive self-education."

"Much of the factual material with which the present curriculum is weighted should be postponed to the stage of post-graduate education, when the doctor has decided on the career he will choose in wide field of medicine."

"Most of our standard text-books must go on the reference shelf, where they properly belong, and new text-books must be written and practical courses prepared which are directed to the study of method and principle."

I feel that in the above four paragraphs we have everything desirable and I request my young readers to ponder over them.

The recommendations of the Goodenough Committee received the general approbation of the British Government. However it was not found possible to implement all of the changes immediately, in view of the enormous cost. The Goodenough Committee estimated that to meet the recurring expenditure necessary for the implementation of the report, the University Medical Schools would need additional resources which would within ten years amount to prewar values between £ 1,750,000 and £ 2,500,000 a year. They also foresaw the need for capital expenditure of some £ 5,000,000. Thus one can realise how difficult it should be to implement the reforms immediately in this country.

Two of the most important problems which confront those engaged in training medical students can be put in the shape of two questions: (1) Can the same educational course meet the student's vocational needs and yet provide a scientific training? (2) Can the curriculum be shorter and the doctor at the same time better trained for medical practice?" Before considering these questions, the reforms which, in my opinion, will receive approbation of all are:

(1) A liberal education in the school and the college. Age is an important factor; the under-aged, however clever they are, cannot fully understand and appreciate medical studies. The American Educationalists who have recently visited the British Medical Schools by invitation, have pointed out the medical student in the United Kingdom whose average age is below that of his American colleague, on account of his immaturity in years as well as thoughts, is lacking in the degree of appreciation of his studies.

(2) Most of the ancillary sciences should be left out from the medical under-graduates' training, since they are taught in the Arts Colleges.

(3) Education should not encourage cramming of facts.

(4) Major surgery and specialities should be relegated to the post-graduate study. In their place, prominence should be given to the study of diseases of local importance.

Facts are not the only diet of the mind and yet students are required to hoard them and this is done chiefly to suit the needs of the old-fashioned methods of conducting examinations which still continue. I prefer not to cite instances, lest I should be misunderstood. The students, having passed the examinations, forget most of the facts they have collected and they are left bankrupt as they start their career. It is

true that teaching is being slowly modernised. The pre-medical (pre registration) subjects such as Chemistry, Physics and Biology are taught in the Arts Colleges. Similarly more time can be gained by shortening the pre-clinical training, from two years to an year and a half. The present curriculum in the clinical years can be greatly narrowed with pruning of the unnecessary subjects. Many teachers who are specialists whether in chest or paediatrics, or gynaecology, so keen on their speciality, should remember that his speciality is but a branch of general medicine.

Teaching and examining medical students must not be in the hands of specialists only. As Professor G. W. Pickering has said, "Each (of a dozen and one) department demands of the student its pound of flesh; it is no wonder that our medical students become little more than memorisers, who spend their days attending classes and their evenings in reading text-books which, once the appropriate examination is held, are never opened again." No practising doctor is expected to be an expert in a large number of ancillary sciences. If any wants to use one of these himself, he can get the knowledge and technique after post-graduate qualification; otherwise, he can depend on others who are experts in that line. A humorous, but pertinent anecdote may not be out of place. A few years back, when an examiner at Cambridge University was upbraided by a fellow examiner for giving full marks to a student who answered a written question he himself did not set, enquiring what proceeding the student would take to investigate the blood sugar contents of a patient's blood, the student answered he would send straightaway to Allen and Hanberry or the Clinical Research Association for the appropriate apparatus for transmitting the specimen for their examination and report. Sir.....retorted to his co-examiner that, that would be exactly what he himself would do.

To-day the young medical man when he starts practice far away from the cities and towns, owing to insufficiency of acquaintance during his training with common maladies and early symptoms, finds most of his patients present none of the signs of the abnormalities which he used to see in the hospital wards. When the training of medical students is simplified,—but made more difficult for the teachers—it will embrace, throughout the course, much more attention than has been given in the past to common maladies, early symptoms, psychology, environmental hygiene, the prevention of ill health (preventive medicine) and to rehabilitation.

# The Chemist's Approach To The T. B. Problem

V. SRINIVASAN, M.Sc.  
*Final Year, M.B., B.S.*

— A REVIEW —

## INTRODUCTION

THE advances made in the field of chemotherapy and antibiotics, though remarkable, have not yet given the human beings their final victory over the microbes. One of the greatest killers of mankind—tuberculosis—is an unique example of a disease, that has remained stubbornly resistant to the chemical agents. The chemists in spite of repeated failures in their attempt to find "the Magic Bullet" are still attacking the problem from various angles. Before going into the subject of recent advances, it will be convenient to briefly summarise a few of the more important biochemical and pathological lesions in tuberculosis.

## PATHOLOGY AND BIOCHEMICAL REACTIONS

The tubercle is the characteristic but however, not the unique lesion of the disease. The exact mode of formation of the tubercle from mononuclear phagocytes is now well known. Important from the chemotherapeutical point of view is the permeability in the tubercles and caseous tissue. Rich<sup>1</sup> has shown that viability of the tubercle bacilli is dependant on the diffusible nutrilites; and studies with sulphone series of compounds<sup>2, 3, 4, 5</sup>, have shown that sulphetrone is able to penetrate the caseous tissue quite easily. As for the hypersensitivity and necrosis it is known to be due to the protein component of the bacillus and the clinical disease in all its manifestations follows from the phenomenon of hypersensitivity. The delayed lysis of the caseous tissue is yet an unsolved riddle. Liquefaction of dead cells is usually a prerequisite for phagocytosis. In tuberculous lesions only a partial autolysis takes place resulting in a formless "caseous" mass. Opie and Barker<sup>6</sup> showed that

active proteolytic function which was present at the onset of caseation ceased subsequently. Jobling and Peterson<sup>7</sup> found that the soaps of unsaturated fatty acids extracted from the tubercle bacilli inhibited *in vitro* the proteolytic activity. It is worth noting however, that caseation is a phenomenon usually associated with mononuclear phagocytic response, while it is absent in polymorphonuclear response where softening is the main feature. We get similar caseation in 'lipoid pneumonia' which evokes a mononuclear phagocytic response.<sup>8</sup> The softening of the caseous substance which is important in the dissemination of the imprisoned bacillus, is attributed to (i) the secondary infection and (ii) the renewed digestion due to the activity of infiltrating polymorphonuclear leucocytes, which are commonly identified in freshly softening areas.<sup>9</sup>

As a result of detailed enquiry of the host-parasite relation in tuberculosis three important biochemical reactions are now understood<sup>10</sup>. (1) Instead of being engulfed by polymorphonuclear leucocytes and digested at lymphnodes, these are absorbed *in situ* by monocytes which subsequently may form a tubercle. If multiplication should occur caseous tissue formation appears to indicate a common biochemical lesion associated with specific enzyme inhibition. (2) The tubercle bacillus produces no toxin, but a product of its metabolism (in the protein fraction) induces hypersensitivity in adjacent host cells, resulting in the death of these cells when multiplication of the bacillus occurs. Thus the death of vital tissues of the host is due to this remarkable host-parasite collaboration. (3) During infection the host may develop capacity to modify the course of the disease—acquired resistance. These take us to the activity of specific substances involved and thus to the chemical composition of the tubercle bacillus.

As a result of extensive studies of the lipoid fraction in tubercle bacillus, many lipins were isolated.<sup>11, 12</sup> The acetone soluble fraction consisted of butyric, palmitic, stearic, cerotic, linoleic, linolenic, tuberculostearic and phthioic acids. The acid hydrolysis of phosphatid fraction also yielded tuberculostearic acid (10 methyl stearic acid) and phthioic acids. The tuberculostearic acid does not show any biological activity. The Phthioic acid<sup>11</sup> however, deserves special mention. It is 3:13:19 trimethyl tricosanoic acid and was found by Sabin<sup>11</sup> to produce typical tubercles. It is this factor in the lipoid fractions of the bacillus that is responsible for the characteristic lesion. Protein and carbohydrate fractions failed to produce tubercles. The acid-fastness of the bacillus is due to the waxy fraction (chloroform soluble fraction) of which 'mycolic acid' is said to be the chief component.

The carbohydrate fractions have no power to induce hypersensitivity<sup>13</sup> but act only as haptens.<sup>14</sup> Their biological activities appear to be restricted to a chemotactic and damaging effect on leucocytes. The proteins however, are responsible for the hypersensitivity.

#### PECULIARITIES OF THE PROBLEM

With this basic knowledge, now let us watch the chemist struggling with the problem which confronts him with peculiar difficulties. The rugged viability of the bacillus due to its peculiar chemical make up is the foremost stumbling block. Again the disease experimentally induced in animals does not follow the same course as in human. The critical requirements of a satisfactory antituberculous substance are rather exacting. According to Feldman<sup>15</sup> the following would be the requirements for experimental tuberculosis in Guinea pigs. (1) The agent should be well tolerated and not give rise to serious effects on the animal. (2) The substance should reverse a well established inoculation tuberculosis induced by a strain of human tubercle bacilli of standard virulence from a progressive destructive process, to one that is non-progressive and will eventually resolve, fibrose and calcify. (3) The desired results should be obtained within a reasonable period of treatment, say within 6 months.

#### EXPERIMENTAL METHODS

Here again the chemist faces lot of difficulties. The encouraging claims for many synthetic substances on the basis of *in vitro* tests proved disappointing when applied *in vivo*. Hence *in vivo* procedures are the safest and reliable. But such procedure will be costly and time consuming. It is not the only thing. The chemist must prepare large amounts of the substances to be tested, so that there may be sufficient substance available for treating at least 6 guinea pigs for 6 to 7 weeks. The chemist is thus facing a formidable task and even after all this trouble he must be prepared for disappointment; the whole series of compounds may fail to show any antituberculous activity. A test which would make it possible to 'screen' thousands of compounds in minimal amount in a relatively short time will be of great value; but such a test is still to come. In the absence of such a test Feldman's guinea pig test<sup>15</sup> is the one widely used.

#### ELIMINATION OF THE PARASITE

In the elimination of the parasite two types of approaches are made (1) A direct approach with chemotherapeutics and antibiotics and (2) an indirect approach with artificial antigens.

A. **Direct approach** :—(1) *Chemotherapeutic screening* : Before the days of Domagk's great discovery, the therapeutic possibilities of guaiacol, creosote, chaulmoogra oil, arsenicals, copper, mercurials, gold and other metallic elements were investigated. In 1932, Wells and Long<sup>16</sup> reviewing the work till then, concluded as follows: "A specific chemotherapy of tuberculosis has not been found and it may be a long time in coming because of the inherent difficulties of the problem". Wells closed his review with the statement: "Probably some new success with some other bacterial infections will be needed to stimulate a new attack on the more difficult problem offered by tuberculosis". It really proved a prophetic statement. Domagk's discovery<sup>17</sup> of prontosil rubrum as a chemotherapeutic agent in bacterial infections gave a new impetus. The early compounds to be tried for anti-tuberculous activity are the sulphonamide group of compounds.

(a) **Sulphonamide compounds** :—Rich and Follis<sup>18</sup> are the first to report that sulphanilamide in adequate doses given at frequent intervals inhibited slightly the development of tuberculosis in guinea pigs. We can sum up the results of various experiments reported, regarding the value of sulphonamide compounds in experimental tuberculosis as follows: (1) These have a limited but a deterrent effect on the course of the disease. (2) These do not cause an arrest of the disease. (3) No sulphonamide compound showing sufficient antituberculous activity, so as to warrant its use in clinical tuberculosis, has been so far synthesised.

(b) **The Sulphone Compounds** :—The next step towards success against the tubercle bacillus, is the discovery of the activity of diamido-diphenyl sulphone against the tubercle bacilli by Rist.<sup>19</sup> The toxicity of the parent substance was reduced by preparation of weighted derivatives. Promin (Sodium PP'-diaminodiphenyl sulphone NN'-diglucose sulphonate) was the first substance to be studied by Feldman and Hinshaw.<sup>20</sup> This gave very encouraging results in guinea pigs but clinical studies were highly disappointing.<sup>21, 22</sup> Diazone<sup>23</sup>, Promizole<sup>24</sup> and sulphatrone<sup>25</sup> were the other sulphone group of drugs tried, and of these the last mentioned was found to have some effect in certain forms of exudative tuberculosis of the lungs.<sup>26, 27, 28</sup> The final status of these however are still to be determined. The chemotherapeutic activity of these appear to be due to substrate competition, since their activity is inhibited by para-amino benzoic acid.<sup>29</sup>

(c) **Other compounds of interest** :—i. *Para amino-salicylic acid* : Lehmann, as a result of reinvestigation of Bernheim's observation<sup>30</sup> that benzoates and salicylates increased the oxygen uptake of tubercle bacilli, found it to be true only in pathogenic strains.<sup>31</sup> He therefore, assumed

that benzoates or salicylates might be active as essential metabolites and he sought for competitive inhibitors. Of the various compounds he studied Para-aminosalicylic acid was the most effective<sup>32</sup> in inhibiting the oxygen utilisation. He tried different substitutions on the ring without any increased effect. More clinical data, however, must be collected before we can define the clinical status of P.A.S.

ii. Recently some of the drugs primarily introduced as anti-malarials are found to show antituberculous activity. Of these the most important being 2-*p*-chloroanilino-4*d*-diethylamino-*L*-methylbutylamino-6 methyl pyrimidine.<sup>33</sup> It was shown by Hoggarth<sup>34</sup> that malaria parasite and tubercle bacilli have similar chemotherapeutic requirements. For various other chemotherapeutic claims one can refer to an up to date survey by Guss and Kloetzal.<sup>35</sup>

iii. Some of the recent *in vitro* tests have given some valuable leads for further research on the subject. Of these the relationship of naphthaquinone to tubercle bacillus is the most significant. In 1911, Twort and Ingram<sup>36, 37</sup> demonstrated the Johne's Bacillus (*Mycobacterium para-tuberculosis*) requires a definite growth factor and in 1940 McCarter and others<sup>38</sup> identified the factor as phthiocol and *L*-Naphthaquinones with vitamin K activity. Phthiocol (3-hydroxy, 2-methyl 1:4 Naphthaquinone) has now been isolated from tubercle bacillus. Thus we now know that vitamin K is a product of bacterial synthesis and that it plays a role in the growth of Johne's Bacillus. This led to the synthesis of anti-vitamin K substances to inhibit the growth of tubercle bacillus. Even though success was met with in test tubes<sup>39, 40, 41</sup> so far no satisfactory compound has been found for clinical trial. Still the hunt for a suitable naphthaquinone derivative is going on. Another naturally occurring quinone to be tried was usinic acid. It shows enormous antituberculous activity *in vitro*<sup>42, 43</sup> but conclusive results from animal experiments are yet to come.

2. **Antibiotics** :—i. *Streptomycin* : Of the various antibiotic substances, streptomycin was the most effective in experimental tuberculosis<sup>44</sup> and more or less successfully applied in clinical trials also. The neuro-toxicity of streptomycin was considerably reduced by catalytic reduction of streptomycin to dihydro-streptomycin.<sup>45, 46</sup> The activity is not reduced in the latter and is well tolerated by the patients.<sup>47</sup> The exact mode of action of streptomycin is not yet established. The anti-bacterial action of streptomycin is reversed by cysteine and other thiol compounds. The dihydro compound however, is not influenced by these. A study of the development of resistance shows that streptomycin may be involved in an unknown metabolic system.<sup>48</sup> It is suggested that streptomycin

competes for an essential metabolite in streptomycin sensitive group, while acts as a growth factor in the resistant group. It is interesting to note that certain normal animal metabolites antagonise the *in vitro* activity of streptomycin against tubercle bacilli. Urea, pyrimidines and purines are examples of these.<sup>49</sup> Lipositol, an inositol—galactose complex, found in brain, soya bean etc., show considerable reversal of streptomycin activity (1 part reverses 300 parts of streptomycin).<sup>50</sup> In this connection a brief mention of the relationship between inositol, tubercle bacillus and streptomycin is worth while, to follow the mode of action of streptomycin and development of resistance in the bacillus.

Inositol is an essential growth factor for certain fungus, yeast etc. Many bacteria synthesise inositol. While many of these bacteria contain only 0.09 to 0.17% of inositol, the tubercle bacillus synthesises from 3 to 9% of inositol. As for the relationship of inositol and streptomycin we can regard streptidine which is a cleavage product of streptomycin as a substituted inositol. Lipositol which is again a substituted inositol has a reversal effect as mentioned before. Putting these facts together we can consider that streptomycin action is probably on the inositol content of the bacillus and that the resistance shown by some strains is probably dependant on inositol containing inhibitory substances.

3. Alkaloid:—The alkaloid cepharanthine is claimed to be extremely effective, in the treatment of tuberculosis and leprosy in man. Toxicity to man is comparable with that of quinine. It is credited with causing lysis of tubercle bacillus *in vitro* and to arrest experimental tuberculosis in guinea pig.<sup>51, 52</sup>

B. Indirect approach:—With the advent of the BCG which confers certain amount of recognisable acquired resistance and the identification of the precise chemical causal agent for the characteristic lesion as phthioic acid, a synthetic or semisynthetic approach to the problem seems possible, by way of artificial antigens. So far no success has been met with.

#### CONCLUSION.

It is only in the last ten years, the chemical attack on the tubercle bacillus is scoring a few victories. The sulphones, P.A.S., and finally streptomycin are the few weapons forged by the chemists. But this is not all; we can confidently expect more effective chemotherapeutic agents and antibiotics in the next few years. Synthetic naphthaquinones and phthioic acids are holding forth some hope for us.

#### REFERENCES

1. Rich, "The Pathogenesis of Tuberculosis", Illinois, 1944.
2. Feldman et al., Amer. Rev. Tuberc., 1942, 46, 187.
3. Brownlee and Kennedy, Brit. J. Pharmacol., 1948, 3, 29.
4. Baggenstoss et al., Amer. Rev. Tuberc., 1947, 55, 54.
5. Brownlee, Lancet, 1948, ii, 131.
6. Opie and Barker, J. Exp. Med., 1914, 19, 645.
7. Jobling and Peterson, *ibid.* page 383.
8. Reference No. 1, chapter 18.
9. Huebschmann, "Pathologische Anatomie der Tuberkulose," Berlin 1928.
10. Brownlee, Chem. Soc., Ann. Rep. 1948, 45, 295.
11. Sabin, Physiol. Rev., 1932, 12, 141.
12. Anderson, *ibid.*, page 166.
13. Sabin et al., J. Exp. Med., 1938, 68, 563.
14. Laidlaw and Dudley, Brit. J. Exp. Path., 1925, 6, 197.
15. Feldman, "Advancing Fronts In Chemistry", Vol. II, Edited by Powers, 1946.
16. Wells and Long, "Chemistry of Tuberculosis", 1932.
17. Domagk, Deut. Med. Woch., 1935, 61, 829.
18. Rich and Follis, Bull. Johns Hopkins Hosp., 1938, 62, 77.
19. Rist, Compt. rend. Soc. Biol., 1939, 130, 972.
20. Feldman and Hinshaw, Proc. Mayo Clin., 1940, 15, 695.
21. Hinshaw et al., Amer. Rev. Tuberc., 1944, 50, 52.
22. Zucker et al., *ibid.*, 1942, 46, 277.
23. Calloman, *ibid.*, 1943, 47, 97.
24. Feldman et al., Proc. Mayo Clin., 1944, 19, 25.
25. Brownlee and Kennedy, Brit. J. Pharmacol., 1948, 3, 29.
26. Anderson and Strachen, Lancet, 1948, ii, 135.
27. Madigan, *ibid.*, p. 174.
28. Clay and Clay, *ibid.*, p. 180.
29. Brownlee et al., Brit. J. Pharmacol., 1948, 3, 15.
30. Bernheim, J. Bact., 1941, 41, 387.
31. Lehman, Lancet, 1946, i, 15.
32. Lehmann, *ibid.*, p. 14.
33. Hoggarth and Martin, Brit. J. Pharmacol. Exp. Med., 1948, 3, 156.
34. Hoggarth et al. *ibid.* p. 160.
35. Guss and Kloetzel Nat. Res. Coun. Lit. Survey, U. S. A., 1948.
36. Twort and Ingram, "Proc. Roy. Soc. 1911, 84, 517.
37. Twort and Ingram, "A Monograph on John's disease", London, 1913.
38. McCarter, Proc. Soc. Exp. Biol. N. Y., 1940, 45, 357.
39. Alcalay, Schweiz. Z. Path. 1947, 70, 229.
40. Iland, Nature, 1948, 161, 1010.
41. Gronwall and Zetterberg, Upsala Lakareforen Forh., 1947, 52, 199.
42. Barry et al, Nature, 1947, 160, 800.
43. Bustiza and Lopez, "Antibiotics from Lichens", An. Jardin Bot. Madrid, 1946, 7, 1.
44. Feldman et al., Amer. Rev. Tuberc., 1945, 52, 269.
45. Donovan and Rake, J. Bact., 1947, 53, 205.
46. Edison et al., Amer. Rev. Tuberc., 1948, 58, 487.
47. Hobson et al., *ibid.*, p. 501.
48. Pain and Finland, Science, 1948, 107, 143.
49. Fitzgerald and Bernheim, J. Biol. Chem., 1948, 172, 845.
50. Rymer et al., *ibid.*, 1947, 169, 457.
51. Nat. Res. Coun. Lit. Survey, U.S.A., 1948.
52. Buchi, Schweiz. Apoth. ztg., 1945, 83, 198.

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A pat on the back develops character, if administered young enough,  
often enough, and low enough.

—Richard Scott.

# The Role of Vascular Spasm in Diseases

Dr. K. RAMACHANDRA, M.D.

**M**ANY are the conditions which come under this terminology of vaso-spastic diseases, the aetiology of which mainly depends on psycho-somatic influences mediated through the peripheral nervous system. In these days of strife and struggle for existence, the competitive conditions under which man is accelerating his progress and the many mishaps which befall the path of his advancement certainly makes his vasculature vulnerable to insults. If the statistics in our daily medical practice is taken into consideration—it will be appalling to hear that such vascular diseases are on the progress, manifesting themselves in various ways and at all ages, since the psychomotor system is becoming highly strung as civilisation is advancing. This is only a protective phenomenon safe-guarding the body from the various forces of nature, keeping the mind in a state of tension and alertness.

**The cause of Vascular Spasm :—**Taking the physiology of the blood vessels into consideration—it is well recognised that the wall of the vessels has plain muscle fibres to keep up the tension within the lumen of the vessel. Moreover the musculature is supplied by two sets of nerves, the sympathetic and the parasympathetic, the sympathetic supply causing vaso-spasm on stimulation. The activity of the sympathetic nervous system is due to the action of pressor agents like adrenaline formed in the adrenal medulla—the store house of the “Emotional substance”. This secretion puts one on the guard and prepares one for the struggle of life—caters to the varying needs of the body and moods of life. So, during the stress and strain of life and during the wear and tear of the body, the psycho-somatic factors play an important role in regulating the tone of the system which is maintained by the vasculature that carries blood to

different parts of the body. Success in life stimulates the emotions; failure in life when taken as a challenge accelerates our speed, again stimulating the sympathetic nervous system. So, whatever episode occurs in our daily life it is nothing but the sympathetic nervous system that has to bear the brunt of controlling our activities, our pleasures and passions. The regulator of the sympathetic nervous system is the hypothalamus and the frontal lobe which play a major role in the control of the pituitary - adreno-gonadal functions. It is through this neuro-harmonal control that psychic influences act and control the soma.

**Meaning of Vascular Vulnerability :—**A word commonly used in cardiological text books and which is coming into prominence in the aetiology of innumerable infective and degenerative vascular states. Almost any disease in the body is explained on the basis of heredity—the inheritance of an inferior type of tissue, an inborn defect of the cells constituting the tissue which is liable to suffer prematurely as a result of an exciting factor. Following the same strain of thought it is logical to view the vasculature of these vulnerable individuals *i.e.*; Vulnerable to disease from the genetic point of view. The Vasculature of these individuals react in an abnormal fashion to the change in the environmental conditions of the body, internal or external. Such persons often manifest certain stigmata of neuro-vascular vulnerability in later life, such as nose bleeds menstrual disturbance, flushing—especially of the neck, migraine, palpitation and nervousness. They are also liable for syncopial attacks—headaches and other abnormal vascular responses such as coldness of extremities alternating with a feeling of warmth; excessive swelling, etc.; Furthermore it will be noted, that they often have a tendency to slight elevation in the blood pressure on emotional provocation, years before they become permanently hypertensive. An insurance examination or a visit to the consultant may raise the pressure to a higher level than the one found by the family physician (Lewine). It is as yet controversial whether sympathetic nervous system is primarily at fault or whether the endocrine system modifies these vascular responses, especially the thyro-pituitary axes. Many points are in favour of such a basis—the vascular responses at puberty, pregnancy and menopause when the demands on these organs is great, support the latter view.

**The result of Vascular spasm :—**Pathological conditions which result are numerous but basically many transient phenomena ensue; the main factor being ischaemia—lack of blood supply to the part hindering the metabolic demands. A continuous state of vascular tension naturally brings about various grades of permanent pathological changes in the tissues resulting in organic disease. A state of Vaso-spasm cuts off the blood circulation in the Vasa Vasorum, brings about various degenerative

vascular changes of which atheroma may be cited in old people and hypertension with arteriosclerosis in middle age. Certain inflammatory diseases like rheumatic fever and nephritis have a predilection for patients who have a vascular vulnerability as shown by the frequent association of rheumatic heart disease and angina pectoris in the same family, and rheumatic mitral stenosis and hypertension in the same individual. These diseases select certain types of people and this so-called vascular type is vulnerable both to the infectious and to the degenerative form of heart disease.

These attacks of vascular spasm come on suddenly and disappear with the same suddenness producing transient signs and symptoms. Such spasmodic attacks may confine themselves to certain areas of the body or may be generalised. Localised areas may be analogous to the shock organs of an allergic process such as kidneys in nephritis-bronchii in asthma. But if one allows the mind to wander into the realms of speculation, it is but natural to conclude that many of the allergic diseases are vascular responses to a foreign matter sensitive to the tissues of the host making the shock organ react violently. Such reactions do not occur in people of vascular stability but do occur in those with vascular instability—a neuropathic personality with an unstable vascular system. These individuals can be easily identified by the dermographia produced by stroking the skin of the back firmly with a smooth hard object.

Some medical diseases resulting from vascular vulnerability:—These, known as angio-neurosis or vaso-neurosis have behind them a characteristic background of a personality trait exemplified well by the terms hard driving, ambitious, reserved and sensitive personalities.

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|--------------------------------------|------------------------------------------------|
| 1. Hypertension.                     | 6. Thyrotoxicosis.                             |
| 2. Migraine.                         | 7. Peptic ulcer, Spastic colitis.              |
| 3. Raynaud's phenomenon.             | 8. Allergic rheumatic bronchial asthma.        |
| 4. Intermittant spinal claudication. | 9. Urticaria-Angioneurotic oedema.             |
| 5. Rheumatic fever, Nephritis.       | 10. Polycythemia? Henochs-Schonleins syndrome. |

Taking hypertension and migraine as typical examples it is very interesting to note that certain types of individuals are susceptible to this disease—people whose vasculature is extremely sensitive to nervous impulses originating from the hypothalamus. Such individuals are extremely emotional, hard driving, ambitious, dominant characters with a strict control over their emotional life, only occasionally released in an

explosive manner in aggressive fits of temper or in periodic moral lapses at times of stress. The hypertensive patient tends to smoke and drink too much and the tenseness which is the keynote of his personality is often evident in a tendency to spasm in the voluntary and smooth musculature. The onset of hypertensive symptoms often coincides with a long period of mounting stress, and occurs under circumstances which in less emotionally inhibited subjects might be expected to give rise to a full blown neurosis. Suppressed aggression is a striking personality trait in many of these patients. The same is true of migraine which often coexists with hypertension because similar personality characteristics are often found in the two conditions—good intelligence, energetic, ambitious and hard-driving meticulous conscientiousness. The vasculature of such individuals are in hyper-irritable state ready to react to minor changes in the environmental and bodily conditions known as trigger mechanisms, menstruation emotional stimuli, suppressed irritation and allergens.

The same tenseness of mind is responsible for many gastro-intestinal troubles, especially ulcerations in the gastro-duodenal area since the abdomen is the sounding board of the emotions. Continued emotional tension, conscious or unconscious always leads to mucosal ischaemia ending in ulcers acting through the Hypothalamus. So this important structure of the brain receives the insults of the psychosomatic mechanism and regulates the status of the vasculature. The ulcer personality is a lean, angular, hyperactive, irritable, aggressively alert and self driving person.

Hyperthyroidism is another example of a functional disease originating on a vascular basis reversible at the start but later becoming an organic entity (irreversible) thyrotoxicosis. Stress and strain of life—Psychic trauma in people of temperamental imbalance increases the activity of the hypothalamic regulator of the sympathetic nervous system. Vascular responses are thus produced, such as excessive sweating increased warmth, pigmentation, acceleration of heart rate, etc. There is peripheral vascular spasm with decrease of peripheral oxidation and thyroid overacts as a compensatory phenomenon to meet the demands of the body. Later the condition becomes established and organic changes take place in the thyroid tissue.

**Allergic Diseases:—**The allergens are agents acting as triggers to fire off the irritable vasculature likend to a loaded pistol in these neuropathic individuals, producing various manifestations due to arteriolar spasm and capillary dilatation—diseases like allergic rhinitis, bronchial asthma, colitis etc., having an associated vascular spasm with smooth muscle contraction. These allergic diseases are not organic in the early stages but are

functional i.e., a heightened vascular response to an allergen conscious to the mind at the inception of the disease and having by accident produced an unfavourable reaction, forgotten later but fixed in the subconscious mind. The same environment, incident or allergen later produces the same response spontaneously without the conscious mind being aware of it. This example only elaborates the unstable mind of these Vaso-spastic individuals—the relationship between the psyche and the soma.

**Dangers of Vascular Spasm:**—Spasmodic phenomenon can involve any vessel in the body and as already mentioned results in many common episodes and diseases in one's daily life. It may lead to localized or generalised spasm which if severe, leads to the production of transient hypertension. Such vascular spasm has been noted in the:

1. Cerebral vessels producing encephalopathic manifestations and migraine.
2. Retinal vessels producing retinopathy,
3. Auditory vessels producing labyrinthine disturbances,
4. Coronary vessels producing acute cardiac episodes,
5. Peripheral vessels producing intermittent claudication and formications in the limbs etc.,
6. Spinal vessels producing transient paraplegia,
7. Pancreatic vessels producing hyperglycaemic manifestations,
8. Intestinal vessels producing dysenteric manifestations,
9. Pulmonary vessels producing pulmonary edema,
10. Renal vessels producing renal cortical spasm, etc.

Such attacks are sudden in onset, related to an acute anxiety factor and the end result or termination is very serious especially when related to the brain or the heart. These sudden attacks cutting off the blood supply to the vital centres may result in coma, respiratory or vasomotor paralysis, convulsions etc., passing undiagnosed and untreated. Vaso-vagal attacks may be such a manifestation due to disturbance of the vasculature of the abdominal viscera producing the characteristic clinical picture.

Personality changes, transient attacks of paralysis, extensive or localised can be attributed to this vascular crisis.

Cardiac manifestations are more dangerous and attributable to coronary spasm bringing on anginal pains, which may terminate ultimately in acute left ventricular fibrillation or coronary thrombosis. Stoke-Adam's syndrome may be such a manifestation.

Retinal spasm may produce transient attacks of blindness, positive scotomas in the field of vision especially noted as an aura of a migrainous attack due to calcarine arterial spasm. Labyrinthine vessels undergoing a similar change produces various labyrinthine disturbances such as vomiting, vertigo etc.; Meniere's disease is one such manifestation. When the renal cortical vessels are involved development of hypertension may be the end result due to elaboration of the pressor substance Renin which further accelerates the hypertension. Thus a vicious circle becomes established and permanent arterial changes may be the end result. Renal cortical spasm is associated with increased activity of the juxta-medullary apparatus, occurring in shock, collapse etc., producing renal anoxia. This is only a compensatory mechanism to maintain the renal circulation at its optimum. Pancreatic vessels undergoing the same changes produce transient attacks of hyperglycaemia, glycosuria, sometimes ketosis etc. Peripheral vessels especially those of the upper limbs suffering a similar insult produce Raynaud's phenomenon—tingling and numbness in the tips of the fingers—dead fingers—and local gangrene may occur as a result of permanent vascular changes occurring. This may simulate many conditions which if undiagnosed may end in deformities. In the lower limbs peripheral neuritis may be simulated but with no response to vitamin B—Such syndromes as acro-paesthesia, acro-cyanosis etc.

Spinal arterial claudication leads to the development of transient motor paralysis, periodic paralysis; rare diseases of the collagen matrix such as scleroderma, dermatomyositis, rheumatoid arthritis, lupus erythematoses, periarteritis nodosa etc. have an element of spasm associated with the organic changes occurring in those structures.

After having enumerated the various diseases and the many disturbances occurring as a result of vascular spasm and vascular vulnerability the thought arises as to the various factors responsible for it. Of course genetic factors are to a large extent to be blamed—the occurrence of a particular disease in a family, so that organ inferiority arises and reaction is evident in the vulnerable tissues. The second factor is

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'environment', which is to a large extent responsible for the emotion, the personality, the reaction to daily problems of life—reactors are shaped in relation to environment.

These basic conditions as genetics and environmental factors act on the hypothalamus and autonomic nervous system and endocrine system, bringing about various vascular responses inimical to the bodily health and longevity.

In conclusion, it is interesting to note the complexities in the control of human vasculature are like a loaded pistol fired off by minor changes in the environmental conditions of the body, acting as the regulator is the autonomic nervous system. In the initial stages the results of the vascular spasm is transient. Later it leads to permanent vascular changes with persistent bodily changes. A good example is hypertension, which in the early stages is labile, later becomes established as a permanent entity. Regulations of the environmental conditions are essential in the early stages in hyper-reactors or autonomically unstable personalities to ward off the permanent arterial hypertrophy and its attendant systemic manifestations. It is attempted to clearly elucidate the meaning of vascular vulnerability—the psychotic personality behind that disorder is also subject to vascular spasm.

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A woman had been bitten by a dog.

Doctor: "It's possible you may be carried off by hydrophobia, madam, so it may be well to note down your last wishes".

The woman busied herself with pen and paper for a long time.

Doctor: "That is a long will, isn't it?"

Patient: "Will? I am just making a list of the people

I'm going to bite".

—F. W. T. Journal, Canada.

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Always remember that though another may have more money, beauty, brains than you, yet when it comes to the rarer spiritual values such as charity, self-sacrifice, honour, nobility of heart, you have an equal chance with every one to be the most beloved and honoured of all people.

—Chinese Proverb.

## Vesalius and his Fabrica

B. RAMAMURTHI, M.S., F.R.C.S.E  
(Member of the Society of British  
Neurological Surgeons.)

(".....give heed, I pray, lest you yield to the opinions of your colleagues. ....among the affairs of mortals there is nothing more fatal or damnable for the human race, than the perverse precepts of physicians."  
Vesalius: The VENESECTION LETTER 1539.)

THE second century after Christ saw Galen, "the Prince of Physicians" with definite views on Anatomy, Physiology and Medicine—views that were never challenged for almost thirteen centuries. Then came one, so young and yet so bold, who could throw overboard these views, backed up only by his own personal observations. This was Vesalius, Professor of Surgical Anatomy, at the age of 23, in a foremost University of Italy, Padua. The degree of Laureate Doctor of Medicine was conferred upon the first day. The very next day, he was nominated "by the illustrious Senate of Venice, which is by far the most liberal in the endowment of the higher branches of learning, Professor of Surgical Anatomy." Vesalius immediately began his teaching and dissecting.

Jacobus Sylvius (the aqueduct of Sylvius is named after him) was teaching anatomy in Paris and was the leader of the Faculty. Vesalius was one of his brightest students. Born in Brussels in 1514, Vesalius belonged to a family of Doctors connected with the Imperial Court and the University of Louvain. This family was steeped in Galenic tradition. But young Vesalius could study only for a short time under Sylvius, before he recognised that the system of teaching anatomy was wrong. His thirst for real knowledge became unquenchable. He could not take for granted what was told to him by tradition and his teachers. The absence of direct proof that could be verified, smarted him. He declared: "The detestable procedure now in vogue is that one man has to carry out the dissection of the human body, while another gives a description of the

The provocation for this article is a visit to the Yale University History of Medicine Library, and the kind presentation by Prof. John Fulton of all the available reprints of the publications of the Society of History of Medicine, from which I have freely borrowed to write the above.

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parts. The lecturers are perched up aloft in a pulpit, like jackdaws, and with a notable air of disdain, they drone out information about facts which they never approach at first hand, but which they merely commit to memory from the books of others; the dissectors are so ignorant that they are unable to explain the dissections to the onlookers; the physician never applies his hand to the dissection and steers the ship out of the manual, as the saying goes. Thus, everything is wrongly taught, days are wasted in absurd questions and in the confusion less is offered to the student than a butcher in his stall could teach the doctor."

This was dangerous. This was heresy, and led to many angry disputes, with his own teacher, Sylvius. In these disputes, all the arts and beauties of eloquence were on the side of Sylvius and all the facts on the side of Vesalius. "I acknowledge no authority save the witness of my own eyes" said this champion of the new method. "I want liberty to compare the dicta of Galen (the Prince of Physicians!) with the tangible facts of bodily structure."

Sylvius had produced for the dissections a few dogs, cats, swine and doubtless would have added the dog-faced monkey and the bear recommended by Galen, if he could have had them cheaply. This was waste of time and young Vesalius was disappointed. But no gloom for him. The tough hearts of those who pioneer grow tougher under disappointments. The third year medical student waited hours near the gallows trying to procure corpses and bones. He climbed the gallows once to take down a skeleton which he brought home in separate parts. He contested for a human skeleton with a pack of hungry dogs in a grave yard. At the risk of his life, he made forays to the gibbets and grave yards. He carried out his public dissections ("Public Anatomy") that year, alone and singlehanded. Such a skill with the knife had not been seen before in the great city on the Seine.—(Paris).

In Paris of those times, bigotry was at its worst and Vesalius knew how close to frenzy the 'excited feelings' of the Frenchmen could carry them. He had himself seen some forty good men of the Reform burned at stakes in Paris for their heresies. Still he dared to challenge Galen and challenge Sylvius, the Galenist par excellence. Sylvius was no fool, no puny schoolmaster. To oppose him, to beard him when at fault to supply the deficiencies of his teaching and all but usurp his teaching function would stretch the capabilities of any youth of twenty. But Vesalius employed all his young skills, ardors and opportunities constantly to learn the truth and to show the truth.

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But the third year student could not get his degree in Paris. A war came and Vesalius left for Louvain—his only title being 'Candidatus Medicinæ' (Candidate of Medicine), for all the risks he had taken and the troubles he had undergone.

But in two years, he was the Professor of Surgery and Anatomy in Padua. Padua! What a difference from Paris, for Vesalius. Away from Paris which was "bent on blocking every forward motion of the human spirit." In Padua, the teaching of Anatomy was generally committed to the Professor of Surgery and the dissections were usually done by the surgeons who were despised by the learned physicians. The success of Vesalius was stupendous. More than 500 men crowded his classes. The dissections at times lasted for three weeks, in morning and evening sessions. These led Vesalius to move more and more away from Galen till he came to the conclusion that Galen's mistakes were derived from the fact that he had never dissected a human corpse. Galen, said Vesalius, was cheated by his monkeys.

Encouraged by his students and friends, and the admiration which his sketches evoked, Vesalius produced in 1543, "*De Humanis Corporis Fabrica*." This was the first complete and systematic description of the human body as "a fabric, a wonderful structure according to the work of the Supreme Creator and the Divine Artist, Nature." The text, the descriptions and the sketches were outstanding and it did not take long for it to be taken as a standard work, in spite of the great opposition by Sylvius and the Galenists. The fight between fact and imagination, between Vesalius and Sylvius, went on for years, both sides using very strong and abusive language. "I recognise no real teacher among them—not one in the whole group," said Vesalius referring to his old Alma Mater in Paris.

The *Fabrica* was published in May 1543, in a splendid edition and it is one of the outstanding books of the 16th century, also from the typographical point of view. It was published in Basle in Switzerland, instead of in Venice probably, because of the fear that a book from Venice may be marked as one from a heretic press. With the *Fabrica*, the authority of Vesalius grew rapidly and he was invited to perform dissections in various places. At the time, a great number of plagiarists in Germany, France, England and Spain tried to present the work of Vesalius as their own in a changed form. Vesalius resented this doubly because the drawings were badly copied, in spite of his statement that he was ready to put the drawings without any charge at the disposal of anyone who wants to use them.

Finally in 1544, as a young man of thirty, Vesalius decided to leave Padua and its chair of Anatomy, to follow the easier road by becoming physician to Emperor Charles V. With this he broke with the past. But even twenty years later, he thought of his work in Padua with deep nostalgia as can be seen in his letter to Fallopius. "I remember the very sweet life that was mine while I taught anatomy in Italy, the true nurse of genius. No opportunity of a dissection can occur here, where I cannot even have a skull....."

Vesalius initiated a break with tradition which continued till tradition unsupported by proof was discarded. But this process took a long time. For instance, one hundred years after Vesalius, Galileo recounted the following episode at a dissection. After the dissector had meticulously demonstrated on the cadaver, the origin of the nerves in the brain, he asked a well known philosopher who was present; "Are you now convinced that the nerves have their origin in the brain and not in the heart?" The philosopher after some meditation answered, "You have demonstrated everything so clearly and elegantly that, if it were not contradicted by the expressed saying of Aristotle, that the nerves arise from the heart, one would necessarily acknowledge that you are right." Such was (and is) the inertia of the human mind to change its convictions. No wonder Vesalius wrote what is given at the heading of this article.

Tradition dies hard, but men ahead of their times, pioneers, see far into the future, boldly challenge nature to reveal her secrets, and break superstition and tradition. These are men of iron will and determination. But 400 years after Vesalius many medical men do not know about this dominant personality. The following episode is interesting. December 1914, was the 400th anniversary of Vesalius birthday. Men of eminence in the medical world wanted to celebrate this. In this connection, Harvey Cushing narrates this: "As December 1914 approached my friend Dr. E. C. Streeter who had a far better collection of books by Vesalius than I, proposed that we call attention to the date by an exhibit of Vesaliana (i.e. book collections of Vesalius) for the spring meeting of the American Medical Association in Atlantic City. For this purpose we were allotted a booth and had a small pamphlet printed with a description of the books we had selected for display. It aroused little if any interest. We had arranged to alternate as showmen, Streeter in the morning hours, I in the afternoon. We met at lunch and on my enquiring "How did it go?" he replied, "Well, only one old codger stopped long enough to read the sign *Vesalian Exhibit* and said, 'Got any samples?'" Streeter

asked "Samples of What?" He pointed to the sign and said, "Samples of Vaseline, of course." Sadder and wiser we returned to Boston with our "samples" at the end of the week."

The creative activity of his life, his courageous fight against dogmatism, his great discoveries in the field of anatomy, the preparation of his books and the foundation of a new trend of medical thought,—all mark out Vesalius. In the History of Medicine, Andreas Vesalius wrote one of the most glorious pages.

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Life's like a key board on which we press  
Black notes of sorrow and white notes of happiness  
But as we struggle a weary life through  
We find that the black notes hold music too.

★                      ★                      ★

Bear not thy yesterday into tomorrow  
Nor load this week with last weeks load of sorrow  
Lift all thy burdens as they come nor try,  
To weight the present with the by and by,  
One step and then another take thy way  
and live day by day.

★                      ★                      ★

In life's rosy morning  
In manhood's firm pride  
Let this be the motto;  
Our footsteps to guide  
In storm and in sunshine  
Whatever assail  
We will onward and conquer  
and never say fail.

★                      ★                      ★

It's worth a wise man's best of life  
It's worth a thousand years of strife  
If thou canst lessen but by one  
The countless ills beneath the sun.

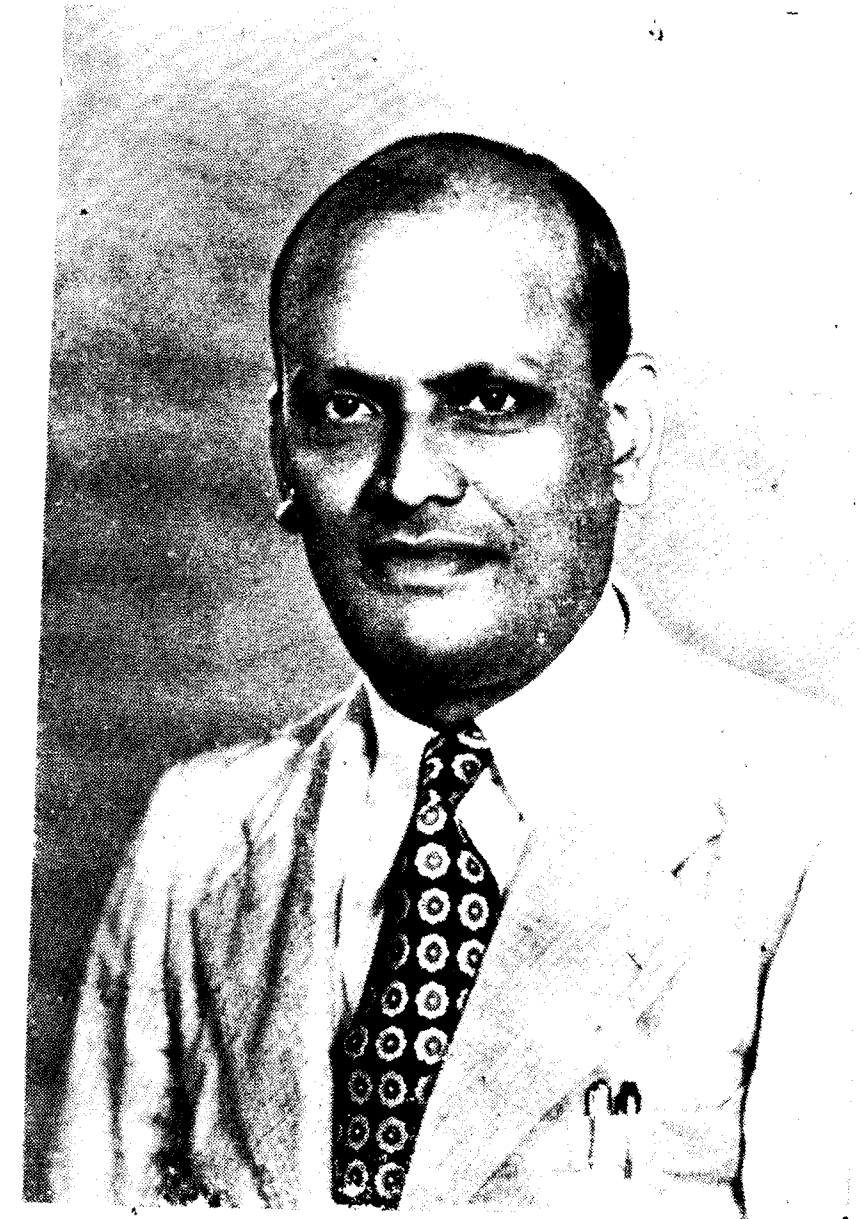
## *Poem*

Sitting face to face  
Drown the throbbing hour  
We must talk of other things  
Benumb the posessing power!

Do you hear the wailing moan?  
O silence the embracing mirth  
Let us not be otherwise  
We are the children of this very earth!

No songs of mystic love  
Sitting face to face  
We must talk of the rising hate  
True to the world's moving pace!

—D. T.



Dr. S. GOVINDARAJAN, M.D.  
Our New Professor of Bacteriology.

*Black kindly lent by the Stanley Medical College  
Magazine Committee.*

# The History and Progress of Blood Transfusion

—J. DESMOND

THE study and progress of blood transfusion, which together with the antibiotics has revolutionised modern surgery has advanced so rapidly in the last fifty years that we sometimes are apt to forget that this life giving process had a unique origin. The word transfusion has become a bye word in every hospital and home and strange to say it is this word which is today baffling the very elect in the scientific world. Antibiotics and chemo-therapy have suddenly herded us into a new and modern era, and yet we must indeed retrace our steps back, and bow in reverence to those who worked and gave their lives to the furtherance of blood transfusion. Across the foundation stone of every surgery in the world should be written in blood the word "Transfusion", for building on it surgeons have fearlessly trod into avenues and recesses of the human body hitherto unknown.

The primary purpose in writing this article is not to propagate blood donation for as you proceed further on you will notice that certain statements will probably contradict the idea of mass donation. The history and progress of blood transfusion are both intriguing and it is with this purpose that I have ventured to lay before the reader, some of the work outstanding facts in relation to the subject.

Before man ever thought of transfusing blood he was taking both animal and human blood by mouth. Warriors, so secular history tells us, drank the blood of those they had claimed in battle, hoping thereby to gain the powers of their victims. It was also drunk occasionally for medicinal purposes. Most people bear no aversion to having a pint or more of blood transfused into their veins, yet the thought of drinking it would probably

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prove most repulsive. But whether we like it or not there is no difference between the transfusing of blood and drinking it, for finally it amounts to the same; the blood of one individual used to nourish and sustain another.

Way back in 1492, the blood of three young men was used by the Physicians of Pope Innocent VIII to try and revive him. Needless to say, the youngmen died before the Pope died. The physicians were handsomely rewarded by being executed. This was probably the first case of blood transfusion in history, though Wiener the foremost authority on the subject seems to disagree.

Early in the sixteenth century, a physician suggested and even went as far as to detail the procedure whereby blood could be transfused from one man to another. It was only after years of experimentation on various animals that in 1665 transfusion was finally carried out successfully between two dogs.

Dr. Deny's of France, was credited with giving the first successful human transfusion. He gave nine ounces of lamb's blood to a lad suffering with anaemia. Of course, we know today that a little more blood would have probably killed the boy, and that he survived despite every unconscious effort made to kill him. The doctor's success was probably due to the fact that he did not 'blood let' in this case, a custom which was common during the period and he "received the applause which should rightly have gone to nature for providing man's body with efficient blood manufacturing facilities". Incidentally, this just goes to prove ironically, what faith even put in recognised medical practice. Goaded on by his success, Dr. Deny's tried some more experiments which unfortunately had fatal results. One of the cases was a syphilitic, whose wife sued the doctor, claiming that he had poisoned her husband. Fortunately the court exhorted him but forbade further blood transfusions. It was later decried by the pope and finally banned both by the French and English Governments in 1675. Interest was again revived in the nineteenth century. This time human blood was used. Only in extreme cases was it permitted, due to the number of fatalities. Doctors were completely baffled as to why blood which proved life giving to one individual should prove fatal when transfused into another. The problem became even more complicated when experiments were tried on various animal species. Blood from different animals was mixed and when transfused showed no untoward reactions; why then had human blood transfusion proved such a failure?

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Landsteiner in 1900 solved the problem by showing that agglutination was produced by the presence of two distinct factors in the serum (agglutinins) and two factors in the red cells (agglutinogens). In 1927 the "M", "N" and "P" factors were found and later still more sub groups. In 1940 striving to produce a serum that would detect further blood groups, Landsteiner (pioneer in blood grouping, and Wiener (present foremost authority) discovered another element, the Rh factor, which divided the human race into two more classes. Tests showed that 85% of the human race are Rh positive, while the rest are Rh negative.

Mixing of these two factors especially in the case of women may have disastrous effects. According to two doctors at the John Hopkins Medical School and Hospital, "the danger is that Rh negative women and little girls may be sensitized through blood transfusion with Rh positive blood. Then if they marry Rh positive men, their babies will be born with the severest form of erythro-blastosis and usually will not survive". At the same hospital, it is of interest to note that the dread malady has increased five-fold in recent years, matching exactly the rate of increase in blood transfusions. Doctors hold that this increase must be due to blood transfusions as the percentage of Rh negatives in the population is fixed. The case is recorded where a man was awarded a judgement of \$ 9,000 because of the death of his wife, which occurred two days after she received a blood transfusion. At the post mortem examination it was shown that she was Rh negative, whereas she had been given Rh positive blood.

Transferring diseased blood probably affords a greater risk than that of mistyped blood. Wiener states in regard to donors that their 'health must be perfect'. At one time an investigation showed that almost five percent of the blood collected by one of the leading blood banks was contaminated with the hepatitis virus. Various types of viruses, including influenza and infantile paralysis might be present in the blood or plasma intended for transfusion. "Allergens" can also be transferred through blood transfusion. It is needless to say that these diseases and hazards which cloud the path of a perfect transfusion should keep us on our guard. Blood donation has become a racket in the U. S. A. Headlines as these—"Blood balances City Debt", "School boys sell blood to raise Easy Money"; "Father sells Blood to Ease Family's Hunger"; "Blood flows on Skid Row"; "Blood Mill Drains Poor", "There is a Million-dollar Red River of Blood Flowing through Los Angeles"—should further keep us alert and in so doing prevent such awful occurrences in our country.

In view of the many groups, main and subgroups, the Americans state that at least 400 different classifications are theoretically possible. Not content with this, Wiener, in discussing the ever-increasing number of groups that are being discovered, says that "an individuality of the blood similar to the finger prints is conceivable". In other words, it is conceivable that each individual has his own type of blood and that it could be distinguished from that of anyone else.

Finally a word about the advancement of technique developed in the last few centuries. The oldest and most difficult was the direct method whereby the veins were sutured together. Then came the 'Semi-direct' method, whereby the veins were joined together with a quill or tube. In some instances this method is still used. Most prevalent today is the 'indirect method' whereby the blood is collected and later fed to the patient drop by drop through a vein. Recently another method has come to the fore whereby the blood is pushed into an artery by air pressure. By it, a pint enters the body in a minute and a half instead of the half hour that the drop by drop method takes.

It would be ridiculous for me to add my own views to what has already been written in this article. I believe that as you have read this you too have been thinking and probably come to the same conclusions that I have, especially in relation to the difficulties and risks met with in blood transfusion. We live in an age when the unsatiable thirst for knowledge leaves us little time to dilly-dally with life. Today, in her birth pangs New India cries out for men who will strive to advance science. Remember that the future of this country will be mainly in the hands of those who have been fortunate enough to have had a sound education. It is upto us then to go forward amid all the difficulties and failures, and build for this land a name that will never be erased.

—★—  
The early fish gets hooked for the same thing  
The early bird gets credit for.

—Hilton Items.

★                      ★                      ★  
The nurse beckoned to one of a group of expectant fathers at the hospital and announced, "You have a fine son."

Immediately another man rushed up and complained, "What's the idea? I was here before he was."

## A Case of Calculus Carcinoma of the Kidney

T. RAMA RAO, B.Sc.,  
III Year.

Name : Adishesan, Age : 23 years. Admitted on : 6-10-1950.

**Complaint:**—Pain in the abdomen and frequency of passing urine for the past 8 years. Subsequently he developed headache, drowsiness and dimness of vision.

**Family history:**—Nil relevant.

**Diet and Habits:**—Non vegetarian, not addicted to alcohol, opium or ganja. Used to smoke.

**History of the present illness:**—He had been suffering from abdominal pain which came on soon after food for the past 7 years. Vomiting was spontaneous and it used to relieve the pain. At the time of admission there was no vomiting. Pain was usually of a colicky type but sometimes the pain radiated to the back as well.

**History of Previous illness or injuries:**—Nil particular.

### Physical Examination :

**General:** Temp: 98°F. Pulse : 86 per minute ; Respiration 20 per minute ;

Blood pressure 105/80 ;

General condition of the patient was fair.

Tongue clean, teeth dirty, no evidence of jaundice noticed. Other systems were normal.

A few veins were prominent over the abdominal and thoracic wall on the right side.

**Percussion:**—Dull and the dullness was continuous with the liver dullness.

Special examinations or investigations :

**Blood :—**Blood urea 39 mgm% done on 7-10-50.

Blood group: 'B'  
R.B.C. 3.14 millions/c mm.  
W.B.C. Total 15,000/c mm.  
Diff. Count: .... P — 74 L — 20  
M — 2 E — 4

**Stomach contents :—**Gastric juice analysis was done on 9-10-50.

| <i>Gastric Juice.</i> | Total<br>acidity<br>N/10 NaOH. | Free HCl<br>N/10 NaOH<br>in cc. | Mucus | Bile. | Blood. | Starch. |
|-----------------------|--------------------------------|---------------------------------|-------|-------|--------|---------|
| Before TM.            | 25                             | —                               | +     | —     | +      | +       |
| ¼ hr. after           | 10                             | —                               | +     | —     | —      | +       |
| ½ hr. after           | 5                              | —                               | +     | —     | +      | +       |
| ¾ hr. after           | 20                             | —                               | +     | —     | +      | +       |
| 1 hr. after           | 20                             | 5                               | +     | —     | —      | +       |
| 1¼ hr. after          | 15                             | —                               | +     | —     | —      | +       |
| 1½ hr. after          | 10                             | —                               | +     | —     | —      | +       |
| 1¾ hr. after          | 10                             | —                               | +     | —     | —      | +       |
| 2 hrs. after          | 5                              | —                               | +     | —     | —      | —       |

— 30 —

There is a coralliform calculus in the pelvis of the right kidney and possibly a Pyonephrosis—

7-10-50 Sulphadiazine 7 tablets

2 St. and one, 4th hourly.  
Mist, alkaline diuretica iv oz.  
1 oz. t.d.s.

8—10—50 Repeat tabs. and mist.

|         |     |                                          |
|---------|-----|------------------------------------------|
| 9-10-50 | do. | Soap and water enema given. Result good. |
|---------|-----|------------------------------------------|

10-10-50      da

11-10-50                      do.

12-10-50 Mist. Heparol iv oz.  
1 oz. t.d.s.

Liver extract.  
Multivit. 6 tabs.  
2 tabs. t.d.s.

14-10-50 One bottle of blood (B gr.) given.

17-10-50 2nd bottle of 'B' gr. blood and dextrose given  
through the vein.

Injection Penicillin 2 lakhs.  
 $\frac{1}{4}$  gr. of Morphine given.

**Operation Details and Anaesthetic used:—**The operation was done under local anaesthesia supplemented by general. The patient was placed on the table in Mayo Robson's position for removal of the kidney. The left knee was flexed and pressed against the body, the other knee being fully extended. A sand bag placed under the loin was raised. Right arm rested on an arm rest.

An oblique incision was made over the 12th rib to expose the kidney. The rib was resected subperiosteally and on further extension of the incision the perirenal space was opened into and the upper pole of the kidney was easily isolated. The enlarged kidney was cystic and through the thinned out wall a large stone was palpated. The ureter was dilated and it was clamped, divided and ligatured after cauterisation. The anterior surface of the kidney was adherent to the parietal peritoneum and it was with great difficulty that the kidney could be separated from the parietal peritoneum. While this separation was being effected, the renal capsule gave way and blood stained degenerating material of perhaps a malignant origin escaped into the wound. Further exploration revealed enlargement of the paraortic lymph nodes and a cavity filled with degenerating material in the right renal area of the visceral surface of the liver. This cavity was cleared of the tissue debris and the peritoneum was sutured over the hepatic defect. The advanced malignant nature was realised and hence the kidney alone was removed after ligating the pedicle and no attempt to remove the lymph nodes was made. The wound was closed in layers after instilling penicillin and sulphonamide into the wound.

**Post Operation course and Progress:**

- 23—10—50 Condition not good.  
2 amps. of glucose with one of coramine given at 8. p. m. Retention enema—Aspirin, chloral hydras, Pot. bromide 30 grs. each and saline to 5 oz. with veronal.
- 24—10—50 At 3 a. m. pulse very feeble. One amp: of coramine; Patient not regained consciousness. Temp: 102 deg F.
- 25—10—50 Condition was still the same.
- 26—10—50 Patient's condition unaltered except the temp. coming down to 100 deg. F.
- 27—10—50 Patient was sinking in the morning. Expired at about 7: 45 p. m.

Post mortem was not conducted in this case.

**Comment:—**The Case is illustrative of an associated neoplasm with a long standing calculus in the renal pelvis. The pelvic epithelium has undergone squamous metaplasia and the constant irritation by the stone has

**CALCULUS CARCINOMA OF THE KIDNEY.**

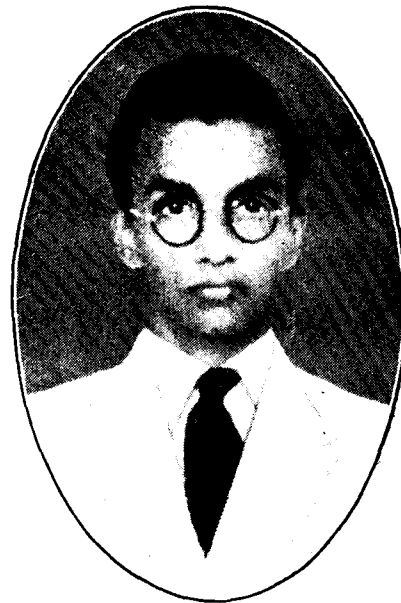


**Photograph of the right kidney removed during the operation.**

The kidney is grossly distorted and the shape could not be made out.

*(Photograph specially prepared and kindly lent by Dr. D. Govinda Reddi, M.D., Professor of Pathology.)*

IN MEMORIAM



Mr. AUSTIN CHARLES

resulted in the malignant transformation. Another illustrative feature of the case is a right sided renal lesion because of the proximity of the right kidney to the duodenum could closely mimic a duodenum in distress. For long the patient had been actually suffering from a renal disease but the predominant symptoms were those of a duodenal ulcer.

**Microscopic examination:**—The tumour was a keratinising Squamous cell Carcinoma.

The epithelium lining the pelvis, calyces and ureter is uniformly squamous in type, with marked keratosis.

The lymph node taken from the region of the pelvis shows extensive carcinomatous infiltration, obviously arising from one of the calyces.

I am thankful to Dr. D. S. Iyer, M.S., F.R.C.S., for permitting me to publish this article and also to Dr. M. Thangavelu, M.D., Asst. to Dr. D. S. Iyer, for the trouble he took to complete the report of the case.

I am also thankful to Dr. D. Govinda Reddi, M.D., for his kind permission to use the photograph of the kidney.

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"Studies serve for delight, for ornament, and for ability. Their chief use for delight is in privateness and retiring; for ornament, is in discourse; and for ability is in the judgment and disposition of business."

—Bacon.

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"Success is getting what you want;  
happiness is wanting what you get".

## Strange Encounter

—K. KURUVILLA.

YOU may not believe in supernatural phenomena but incidents sometimes happen, for which we cannot find any explanation. Such a thing happened to a friend of mine once and you may draw your own conclusion after you have read his story. But before I proceed to put it down I regard it a necessity to mention the circumstances in which we first met.

During the war, I was a captain, at the naval hospital in Gibraltar, for sometime. One night, a man was brought in with a sharpnel wound on his head and his condition happened to attract my attention. The injury was confined to the scalp only and rather too insignificant to explain his deeply comatose condition—I found out that his name was Martin-Lieut Commander Martin D.S.C.—of the department of naval intelligence. Of course, we did everything we could for him but his recovery was more due to his strong, wiry constitution, than to our ministrations. During his convalescence, we became good friends and I found in him a character worthy of his physical strength, pleasantly tinged with a sense of humour, which, unfortunately was often found lacking in other patients, who have had occasion to come to our hospital.

As days passed and Martin slowly gained back his health, I came to notice a growing restlessness in him, and I was gravely perturbed once or twice by the intensity of his mental depression. During these spells, I had the strange feeling that he wanted to confide in me about something which seemed to trouble his mind very much. However, something seemed to prevent him from doing so and all I could see was that he used to spend sleepless nights smoking numerous cigarettes and wearing himself

out and looking thoroughly exhausted in the morning. One day, in one of his more pleasant moods, I broached upon the subject and seeing my concern, he decided to tell me about his troubles.

"Have you ever been haunted by anything in your life?" he asked me.

I said "No".

"Then you will find it difficult to understand what I have been through during the past few days—What I am going to tell you may even sound rather silly to your logical mind but please don't laugh at me for goodness sake - I would rather you heard it than any other fellow I know - and being a doctor you may be able to help me out though I feel that my problem is more on the psychological side than on the medical".

I gave him my reassurance and settled down to listen.

"I told you once that I work for naval intelligence" he proceeded, "My particular job is only indirectly connected with intelligence work—more on the executive side—if you know what I mean—I command a torpedo boat squadron which is employed for special work by our department. My last assignment happened to be an ordinary one, quite unconnected with intelligence work. We were doing an exercise in the mediterranean that night. I mean the night I was brought in here—patrolling a secret shipping lane, known to us to be frequented by Italian supply ships. During this patrol my boat got separated from the squadron and thus we were alone when we came across a couple of Italian vessels—an oil tanker with a destroyer escort. We recognised their silhoutte from a distance and managed to creep up to about 2,500 yards before they could spot us. By this time the destroyer had found us out and they started firing starshells to illuminate the target and thus we got their exact range and torpedoed them. Before the destroyer could get its guns trained on us, we got out—we were quite far away when the oil-tanker exploded".

By this time, we had gone nearly out of range of the destroyer's guns but a stray shell exploded behind us, blowing off part of the rear deck rails and radio-mast and seriously injuring my No. 1 torpedo man. I suppose I also got my wound just then, but in our hurry I did not feel anything at all. In about ten minutes, the blazing tanker was only a faint glow on the horizon. It was a dark and moon-less night; we were doing a steady forty knots—My junior officer passed me a mug of chocolate. I relaxed my vigilance and lighted a cigarette.....

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Some noise from behind, caused me to turn around suddenly. As I turned, something seemed to explode inside my head and I heard a crash—a tremendous tearing sound. The boat seemed to shudder under my feet and I felt myself falling. There was a red flash in front of my eyes and bells seemed to peal in my ears. Then things went dark.

I remember opening my eyes; everything was vague and misty at first. I felt horribly cold. Then it cleared up slowly. Doctor, I shall never forget what I saw there. The whole thing was impossible and yet.....I noticed the roar of our engines was missing. I slowly realized I was on the deck of a strange boat. *It was not my boat.* The vague and shadowy form of a girl was stretched out before me with her head pillowed on a folded sheet of tarpaulin. A pale moon illuminated the water dripping from her clothes and made small pools on the deck. Her face moved me as nothing has ever moved me in my life; beautiful-yet sad and exhausted....eyes half closed. He wiped his wet forehead with a trembling hand and stared with unseeing eyes, into the night. Slowly he turned and looked into my eyes.

"Doctor, that face haunts me. I see its sad beauty wherever I look. I cannot close my eyes. I see it.....I cannot sleep because of it....."

"What happened afterwards?" I asked him after a while.

"Oh, yes" he replied "I remember standing and looking at her. Then suddenly everything was blotted out by a red flash and I heard the bells again. I cannot remember what happened after that. When I opened my eyes, I was here in this room and you were bending over me.

"You were unconscious for exactly sixty-two hours" I told him.

"Funny thing is", he went on "I asked my junior officer the other day, to describe in detail what had exactly happened to me and he told me I had fallen down suddenly, unconscious. They noticed my wound then and thinking my life was in danger had brought me here as fast as they could.

He closed his eyes and sighed. I remained silent. I do not try to find any explanation for this strange story—perhaps it was due to his injury he saw the vision—Cerebral irritation producing hallucinations; perhaps there was something more in it. I could not help him.

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I met Martin again about five years later. After the war I had built up a good practice in Singapore and settled down to a rather retired life.—Late one evening Martin dropped in at my surgery. My pleasure at seeing him once again, turned to surprise when I saw the changes in him. He looked almost his old self and yet he looked more natural. We talked about the old navy and suddenly he burst out:

"Doc, I almost forgot to tell you. It happened to me....."

"What happened to you?" I asked. "Dont you remember my strange experience—that gunboat incident?".... he replied, "well, it may sound strange—rather it is strange but it happened to me."

"Tell me about it" was all I could say. "After leaving your hospital, I had a very bad time." Martin went on, "I tried to forget the whole incident but that face kept on turning up in my mind, at unexpected moments—I nearly went mad once—you know how you feel when things you earnestly desire, elude your grasps in spite of all your struggles to achieve them.....But the years passed on and I got over it I suppose."

"I left the navy about a couple of years ago. It took sometime however before I could fit myself into the order of things. I inherited a lot of money from my uncle who had died and that made things easier. Well about a year ago, I came down with an attack of Malaria. Just for a change of air I took a holiday and went down to my estate which I had recently acquired."

"I had heard from the local enthusiasts that the sea around my place was good for a bit of sailfishing—You know what a sailfish is I suppose?"

I nodded I once hooked a three hundred pounder in the Arabian sea—It is a tough job to catch them through.

"Well—my ambition was to bag one of them", Martin continued "and so with this intention I hired myself a motor cruiser and went fishing along with my chinese boy-Ching."

"Did you catch any?", I asked. 'No' Martin said, "Before I could, something happened.....we were about fifty miles off shore, doing a steady 10 knots one morning, when Ching, who was on the lookout for sailfish, brought my attention to a speck on the sea. I thought it was a ship at first, but it turned out to be part of a turned out yacht. It took us

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the best part of a couple of hours to reach it. There was no one on board—part of it was still smouldering—I swept the sea all around for miles, for any possible survivors. There was nobody in sight and I gave it up after a while. By this time I had forgotten all about sailfish and what not—In fact I had had just about enough of fishing and fuel was running low and I thought I would return home”.

“It was late that evening, about 10 O'clock, I think, when we came across a survivor. It was pure accident—She was floating past on a spar and the credit goes to Ching who was at the wheel for spotting her—he stopped the boat immediately and with some difficulty managed to get her on board. Our lights had fused earlier that evening and there was only a pale moon to illuminate the scene. Of course, I did not know it was a girl at that time and in that hurry I did not notice anything about her except she was alive but in a very bad condition. We put her down on the deck and Ching found some tarpaulin to pillow her head. I sent him inside to get some hot blankets and brandy and all that and hurried into the cabin to get a light”.

“In my hurry, I bumped my head on the cabin door. The pain was horrible and I remember I cursed. I was still cursing when suddenly.....I remembered the old incident, which had happened, years ago. It was the pain which brought it out. I remembered the girl stretched out on the deck.....The sudden realisation of the coincidence brought my hair standing on end. I slowly turned and looked.....”

“In the pale moonlight I found her lying on the deck just as I had seen her years ago. I went through that same experiences once more doctor. Every detail was clear and familiar—the girl, that face which had haunted me for years, the wet clothes, the out-lines of the boat—all bathed in the soft moonlight... ..I had at last.....”

“What happened to her”-I asked. “She lived” Martin replied-‘she was the only one who had escaped from that yacht, I had seen’.

“Where is she now?” I wanted to know. ‘She lost everything she had with the yacht’ Martin Said, “She is living with my mother now; .....soon I hope to.....” I could sense the happiness in his voice.

“You mean you are going to marry her?” I burst out. “What else?” he smiled.

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## What I Saw in Denmark

Dr. C. K. P. MENON, M.B., M.S., F.R.C.S.

THIS story Commences on the 30th of September 1948. It may have lost some of the effervescence of the first impressions but the essence is all the more crystallised and clear by the storage.

I have to be thankful to the Medical Adviser to the High Commissioner for India at London (Col. Pasrischa I.M.S.) for the opportunity he gave me to visit several countries in Europe. I was selected as one of the three Indian Representatives to undergo training in Tuberculosis in Denmark, undertaken by the Tuberculosis section of W. H. O. Dr. Holm, the head of the Department of Bacteriology in Denmark and the head of the Tuberculosis section of W. H. O., gave us all help, directions, advice and instruction. This all too short a period of my stay in Denmark was so full of useful observations in the field of scientific and social advancements of this small country that I consider this time to be one of the most profitably spent periods of my life. I cannot forget the courtesy and kindness that my colleagues and myself received at the hands of all those very simple and great people who made it a business of theirs to make us all feel at home; and among them all Dr. Johanes Holm's smiling face has left an unforgettable impression in me. The contrast of courtesy from those who are really great with the curtness (amounting to boorishness) from those who pretend to be great will not escape the observation of any one who makes a study of human personality.

We left London by a B.O.A.C. Plane on the 30th September 1948. It was a sunny afternoon. We reached Copenhagen (*Kobenhaven*) in about three hours. We were flying fairly low along the north coast of

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France, Belgium and Holland and yet visibility was poor and so aerial observation of the coastal countries, which I was looking forward to, was not possible. We were received at the aerodrome at Copenhagen and taken to the 'Docton's College' where we were comfortably lodged and looked after.

My first impressions after reaching Copenhagen were that, unlike England, food was plentiful here. Denmark is a country of milk and meat (not milk and honey) - No drinking water is kept usually but milk is taken in large quantities by all. The city has a population of about a million and is very much modern in every way. There are several hospitals, all fully and very liberally equipped and staffed. There is a state university with distinguished professors. There is a Serum Institute, the pride of Denmark, where a lot of distinguished men and women do brilliant work. There there is no stint of materials and mind to do good work. There is a National Museum, with beautiful works of arts all collected from various parts of the world at great expense, and given to the state by the "Beer King", a standing example how the best use can be made of money made by encouraging even drinking habits. Within a few miles of the heart of the city there is an extensive park, a real park with plenty of trees and plenty of wild deer where one can feel oneself 'away from the madding crowd'. It is a pity that in India our ideas of maintaining a park are rather different.

Denmark has extensive coast line and has several islands. Fishing is one of the important occupations and sources of revenue for the state, although agriculture is the more important. *Industry* occupies an essential position in her natural economy. About a fifth of national income is from industry and about a third of the total population is employed in industry. The complete domestic need of many "consumer goods" is met by this industry, thereby effecting a great national saving. A country without the usual requisites of raw materials like coal, oil and iron should be given full credit for the hard work and intelligent co-operation and co-ordination of the people which have resulted in the industrial progress Denmark has made. 'A well educated population, skilled workers and commercial insight' have built Danish Industry. This could easily be a lesson to us in India as to what can be achieved if there is a will to do so. In ship-building industry particularly in Diesel Ship, Denmark plays an important role.

Denmark's *Agriculture* is the envy of her neighbours and the mainstay of hers and her neighbours' food problems—About a million of Denmark's 4 millions of people are engaged in agriculture. All the

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improvement has taken place during the past 150 years. This progress has been the results of (1) the recognition of the 'rights of man' and (2) wise statesmanship. Individuals respect for the community and community's respect for the individual are both simultaneously required in sustaining Democracy. Denmark can teach this lesson to all those nations who are willing to learn from her.

Danish *Co-operative Movement* has been also responsible for the proper marketing of the food products to her neighbours. This has improved the self-esteem of the Danes as well as their esteem in the world. Danish eggs, milk-products and Danish bacon are considered to be some of the best the world has produced. The practical farmer works hand in hand with the scientist, a feature I found also in Palestine in the Jewish colonies.

It is worthwhile studying the progress of *Education* in Denmark. Obligatory primary education was started in 1814 making it obligatory on the parts of parents to get their children from six to fourteen years, educated in public and private schools or at home. The aims of the primary school according to the authorities in Education in Denmark are among others:—(1) It should develop and strengthen the pupils' sense for ethical values (2) teach them respect for human life and nature, and affection for their home and people and country, respect for the opinion of others, a feeling for the fellowship of nations'. There is ample evidence that these aims have been achieved.

There can be no greater ideal in the education of people of any country. It is the cornerstone of the edifice of progress for any nation. We are sadly reminded how barren we are even in this field how even several of our so called educated persons forget most of the above ideals.

University Education in Denmark is free and many of the students can do paid work to help them on for most of their other expenses.

Another feature of Danish educational progress is the voluntary non-vocational school for young men and women by means of folk High School and evening school.

I have given in some details some of the essential features of progress of modern Denmark to show how in about a hundred years from almost nothing by way of resources a small but strong well-knit nation has come up in the world, enjoying much respect from others and giving much help to all its neighbours. But it must not be forgotten that Denmark has a long history.

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In no way behind hand is the progress made in the field of *Public Health*. When food and education are on satisfactory level public health should not cause much anxiety to any nation. Nevertheless to see that none should suffer for want of attention when they are sick there are antenatal clinics, children's special nursery, children's health resorts and convalescent homes, convalescent homes for adults, visiting nurses and doctors for those who do not wish or cannot for any reason go to hospitals. In addition, for preventing venereal diseases and early detection of such diseases as Tuberculosis various institutions like the Central Tuberculosis Institute at Copenhagen are functioning, where mass radiology, blood examination etc. are done to find out the sick, segregate them and treat them at the expense of the State.

How does the state do all these? First of all, there is the health insurance scheme which contribute to part of the expenses. The rest is met by judicious taxation. When people get back in the form of social amenities, personal attention, educational facilities and treatment of sick persons, the money they pay as taxes the unwillingness to pay tax is not much. I need not paint the picture that exists in India. It is better imagined.

There is old age pensions and home for the old and maimed who cannot work. The average unskilled worker gets about 4 to 5 thousand Kroners per year. The maximum annual pay any body can get in Denmark is Twenty thousand Kroners. One Danish Kroner is roughly 3/4 of a rupee.

But the living cost is comparatively cheap as all essential food materials are cheap. The homes are all nicely built and there are many built by the state for the workers and middle class people for a nominal rent.

The politics of Denmark is a feature on which I have little to write. The king is popular and is the head of Government run by the elected representatives of people whose idea is to live in peace, a life according to their ideals without troubling others. Usually Denmark's policy is to be in line with Norway and Sweden without losing its independence.

During my stay of nearly two months I saw and learnt many matters of professional and scientific interest but what has impressed me most are the smiling faces of a contented well nourished happy people, the laughing healthy children and the most helpful nature of all towards strangers to their lands.

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If what I saw in the capital impressed me well, what I saw in the remote corners which I visited impressed me better: extensive areas of intensive cultivation with all modern facilities, the smallest hospitals with the most up-to-date equipment, small towns with all amenities for children's education, amusements and relaxation, roads everywhere in good condition, sea-side resorts, schools in far away corners all with almost same decent scale of equipment and staff as in cities. The state has taken it as part of its duty to provide quarters for the staff. A point which struck me because it is unusual in our country is the infrequency of transfer of medical personnel. A doctor in charge of the hospital makes his home in that locality, takes a pride in the proper working of his institute and rightly gives credit to all the staff for the various duties that are allotted to them. No credit is given by the state for curtailing the expenses but credit is given for making the maximum use of the allotment given. The usefulness of a medical institution is measured by the sense of well being and satisfaction it gives to the population it serves. The expense is only of secondary importance if the former can be achieved. To a statement that patients can get treated cheaper by indigenous system than allopathy, the Prime Minister of India Sri Jawaharlal Nehru is reported to have replied to the effect that it is even still cheaper to die. It is far better and cheaper to close down institutions which cannot be properly maintained than maintain institutions understaffed and ill-equipped.

It may be remarked that Denmark has achieved all she has done because she is a small nation of four million people. What she has achieved, a larger nation with greater resources must logically achieve in less time. Can we not do it? We can; if we have confidence in our ability, trust in our neighbours and if we can be honest and sincere in all our actions and considerate and kind in our behaviour.

—★—

Private opinion creates public opinion. Public opinion overflows eventually into national behaviour; and national behaviour as things are at present, can make or mar the world. That is why private opinion, and private behaviour, and private conversation are so terrifyingly important.

# A Case of Rheumatic Pleural Effusion

MAN MOHAN AHUJA,  
V Year.

Name :—Munuswamy. Age—32 years. Cast—H M.

Admitted on 15-11-'50. Discharged—16-1-51.

Complaint :—Pain in the chest—Since 3 months

Breathlessness—1 Week.

**Present History :—**The present complaint started with an attack of cough and pain in the left side of the chest three months back. Pain was diffuse all over the left chest, at times it was stabbing in nature and pressure over the region relieved the pain; later patient had fever which was acute in onset and lasted for a week. Following the fever, pain in the chest increased and patient noticed shortness of breath while doing his normal work. Since last one week even slight exertion makes him breathless. Patient has lost weight, appetite is poor, bowels move regularly, micturition normal, sleep normal.

**Past Illness :—**No history of cough, evening rise of temperature or haemoptysis. No history of joint pains, fever etc., or sore on the penis; or a purulent urethral discharge.

**Family History :—**Married, two children. No history of similar complaints in the family.

**General condition on admission :—**Patient is a middle aged well nourished individual of normal physique with orthopnoea and anxious look. He is Cyanosed, not anaemic, not jaundiced; clubbing of fingers present. No superficial glands palpable anywhere in the body. No

subcutaneous nodules felt over the ulnae or tibiae; no distended veins seen anywhere; no oedema in the extremities or elsewhere. No tremors of the hands.

**Skin :—**Healthy; warm. **Hair :—**normal.

**Decubitus :—**Patient feels more comfortable while sitting up.

**Temperature :—**99°0 F.

**Respiratory System :—**Rate: 20 per minute; Type: Thoraco-abdominal.

**Inspection :—**Chest shape and form normal. There is fulness on the left side of the chest with bulging of the intercostal spaces. Movements of the left side are impaired; on the right side movements are increased. No abnormal wasting of muscles.

**Palpation :—**Trachea is displaced to the right; maximum cardiac impulse is felt about 1" lateral to right lateral external line. Palpation confirms that movements are diminished on the left side.

**Vocal fermitus :—**Absent on the left side except the apical region. It is normal on the right side. No tactile fermitus felt; no area of local warmth felt.

**Percussion :—**Left side—Stony dull from base to second rib in the midaxillary line. Well resonant in the area above in this level.

Right side—Normal.

Tranbe's space is obliterated.

Shifting dullness is not present.

**Auscultation :—**

**Breath sounds :—**Left side—Bronchial breath-sound heard over the area of stony dullness. In the area above this, harsh vesicular breath sounds with few crepitations heard.

Right side—Harsh vesicular breath sounds heard.

**Vocal resonance :—**Left side—absent except at the apical region.

Right side—Normal.

No succussion splash heard.

Cardio-Vascular System :—

Pulse :—Rate : 92 per minute. Rhythm : regular, Tension : normal, Volume : good. Arterial walls not thickened. Blood pressure : 105/75.

Inspection :—Precardial area normal, no pulsations over the pre-cardium. Veins in the neck are full; faint pulsations seen. Apex beat is not visible.

Palpation :—Apex beat cannot be located, the maximum cardiac impulse is felt 1" lateral to the right lateral external line. No thrill felt in the precardium.

Percussion :—2nd rib (lower border)  
2" lateral to right sternal line?

Auscultation :—Heart sounds heard normal in all the areas. No endocardial or exocardial murmurs heard.

Examination of other systems revealed nothing abnormal.

Investigations :—X-ray Chest. Massive effusion on the left side of the chest. Skiagram taken on 20-11-50.

Sputum : Ordinary method } No. A. F. B. seen.  
Concentration method }

Resting gastric juice—A. F. B. not seen.

Blood :—

|        |   |                      |    |    |    |        |   |             |    |    |    |
|--------|---|----------------------|----|----|----|--------|---|-------------|----|----|----|
| 15/11. | { | R.B.C. : 4.1 million |    |    |    | 20/12. | { | 3.2 million |    |    |    |
|        |   | W.B.C. : 9800        |    |    |    |        |   | 8200        |    |    |    |
|        |   | D.C.                 | P. | L. | M. |        |   | E.          | P. | L. | M. |
|        |   | 40                   | 54 | 24 | 4  |        |   | 51          | 36 | 4  | 2  |

Blood Sedimentation Rate :—

| Date   | First Hour | Second Hour. |
|--------|------------|--------------|
| 20/11. | 50 m.m.    | 73 m.m.      |
| 5/12.  | 47 m.m.    | 99 m.m.      |
| 20/12. | 82 m.m.    | 124 m.m.     |
| 15/1.  | 25 m.m.    | 32 m.m.      |

Pleural Fluid (Aspirated) No cells  
No growth in culture  
Total proteins. 6 Gms.

Progress of the Case :—

- 15/11. Patient started on Mist. Heparal Oz. 1 t.d.s. Cal. Gluconate 10 c. c. 10% I.V.
- 17/11. Patient very dyspnoeic. Aspirated 44 cc. of straw coloured fluid. Patient relieved of dyspnoea.
- 2/12. Second aspiration done. 32 oz. of fluid withdrawn; 1 ampoule of P.A.S. was put in intrapleural. Calcium Gluconate continued. Vitamin B. 1 ampoule given Intra-muscular.
- 8/12. Third aspiration (6 oz.); second ampoule of P.A.S. put intrapleural.
- 19/12. Patient developed fever. Fever lasted for a week ranging between 100-101°F. On 21/12. Patient had pain in left ankle. The joint was swollen, skin over it shining, red, and warm. Movements were painful. Next day pain and swelling shifted to knee joint and later on to the opposite side. Patient had soft systolic murmur in the mitral area. Murmur replaced the first sound completely, was not conducted and was not heard in any other area. Patient was put on Mist. Soda Salicylate oz. 1. t.d.s.
- 23/12. Temperature came down to normal. Patient felt general weakness; relieved of joint pains. Mist. Soda Salicylate continued. Cal. Gluconate given intravenously.
- 29/12. General condition good, Improvement marked. Heart sounds normal in all the areas.
- 15/1. X-ray chest :—Little fluid left in the left base.  
B. S. R. :—Came down markedly (20 m.m. in first hour).

Differential Diagnosis :—

With physical findings of (on the left side of the chest) :

1. Lack of movements.
2. Dullness and percussion.

3. Mediastinal shift to the right.
4. Decreased vocal fremitus. Bronchial breath sounds and decreased vocal resonance.

A diagnosis of effusion left side Pleural cavity was made and confirmed by diagnostic aspiration.

The main causes of sero-fibrinous pleurisy are :—

A. *Primary causes in the pleura :—*

- (a) Tuberculosis
- (b) Rheumatism
- (c) Terminal stages of chronic and wasting diseases.

B. *Secondary causes :—*

1. Secondary to pulmonary lesions.
  - (a) Tuberculosis.
  - (b) Lobar and Broncho-pneumonia especially Streptococcal.
  - (c) Suppurative diseases of the lungs.
  - (d) Infarct of lung reaching the surface
2. Secondary to extrapulmonary causes :—
  - (a) Pericarditis.
  - (b) Periostitis of ribs.
  - (c) Acute infectious conditions below the diaphragm.

**Discussion :—**

The case presented would have remained diagnosed as one of "Idiopathic Pleurisy - Tuberculosis Pleurisy" had it not undergone the course of events which followed.

To make a summary mention of these :—

- (a) Patient had massive pleural effusion on the left side.
- (b) During of the course of the disease, he had fever of 100-101°F for a week.
- (c) The fever was accompanied by pain and swelling in the joints of lower extremities. Pain was fleeting in nature.
- (d) There was endocarditis evident by the presence of soft systolic murmur.
- (e) Blood sedimentation higher during the acute illness.
- (f) The response to salicylate therapy was specific.
- (g) Sputum, Pleuritic fluid and other examinations gave no evidence of active tuberculosis infection.

These factors gave evident proof that this case was one of rheumatic manifestation. Pleurisy being the prime and major manifestation of the disease in the final stages later involving the joints. Dealing with rheumatism there is widespread involvement of fibrous and serous structures by the causal agent of rheumatic fever. This causative factor circulates in the blood stream, damages the small arterioles of the body and sets up a condition of inflammation—acute or sub-acute which calls attention to itself especially in and around the joints, in the heart as a whole, in the subcutaneous tissues and other fibrous, and serous structures of the body.

The pleura being a serous membrane, might be expected to suffer in rheumatic fever. According to "Paul" Pleurisy is the commonest lesion next to the cardiac ones and is specific in character. It is at first dry, later becoming moist. Paul states that a wet pleurisy is found in one half of the fatal cases.

The disease is much more frequent on the left side than on the right side suggesting a probable spread of the infection from the pericardium to the pleura.

Microscopically there is metaplasia and desquamation of the endothelium with severe non-suppurative inflammation in the sub-pleural layers.

The fluid in all these cases is sterile.

The above may be cited as an atypical manifestation of the rheumatic process which often localises itself to a particular structure later manifesting itself in other places. Such presenting manifestations may occur in them:

1. Chorea, when the infection predominantly involves the brain;
2. Skin, producing rheumatic nodules-erythema etc.;
3. Periosteum, growing pannus being the symptom;
4. Epistaxis, due to vascular changes in the nasal septum;
5. Alimentary tract may be involved giving rise to persistent vomiting--diarrhoea--colic etc.;
6. Lesions have been noted in the lungs and liver producing pathological changes identical to pneumonia, Hepatitis etc.;

With the diversity of these lesions of rheumatic fever - Protean in its manifestations, diagnosis is often difficult when one particular tissue bears the brunt of the infection. Such acute atypical manifestations are often missed in the early stages, but later the development of a full blown picture of rheumatic arthritis and carditis two most common manifestations reveals the true aetiology of the condition. I am indebted to Dr. B. H. P. Pai, M.D., Physician and Prof. of Medicine, for permission to report this case from his unit.

—★—

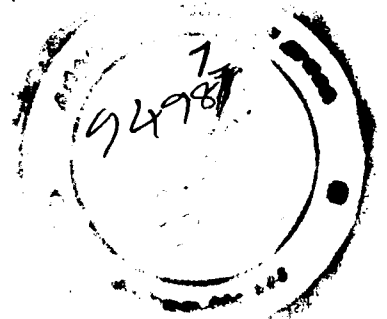
Growing old is no more than a bad habit which a busy man has no time to form.

★ ★ ★

Bad weather always looks much worse through a window.

★ (Radio talk delivered at the Madras Station of the All-India Radio on 9-3-'51 at 21-15 hours, and published with the kind permission of the Station Director, A. I. R., Madras).

## Bacteriophage - Nature



—Dr. S. GOVINDARAJAN, M.D.

THOSE that listen to my talk now must be aware that certain infective diseases like cholera, typhoid, dysentery, plague etc., are caused by minute living organisms known as bacteria. You will be interested to know that certain agents infecting these bacteria and destroying them, also exist and they are known as Bacteriophages. If a material containing the infective bacterium such as the faeces of a convalescing cholera patient be filtered in such a way as to remove the bacteria, the bacteriophages can be obtained from the filtrate in such cases. These bacteriophages share with the viruses infecting plants and animals, several characteristics and they may as well be called bacterial viruses.

The term 'bacteriophage' would normally indicate eating up of the bacteria. The bacteriophages have capacity to lyse the bacteria i.e., to disintegrate and dissolve them. They can coexist with the bacterium without producing any harm and also multiply and produce finally the death of the bacterium. Some of the phages can produce the death of the bacterium by a simple massive attachment to them. Some bacteriophages live in symbiosis with the bacterium and though not harmful to the bacterium carrying them, can release themselves and produce lysis i.e., diseases of the related bacteria. The phages are also known to live inside the spores and be transmitted to their offsprings.

They are found in nature in materials and in situations to which the infective organisms have great access; the common sources for the isolation of the phages being the faeces of birds and animals, and sewage and river waters to which such and other faecal matter gain access.

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But Oh! It flew in air  
In search again of a 'madame' fair!  
Now suddenly there is a hue and cry  
There is a scoring error and aye—  
All the boys and all the girls  
Are swept off feet in a stormy whirl:  
"It's thirteen seven," says one,  
While yet another laments, "Oh! It cannot be done."  
Someone shouts, "Body assistance—point for us!"  
While a third one asks, "What's all this fuss?"

Above all these, there goes a cry  
'Korea, Korea', from a thundering guy,  
And somebody wants instead  
The ball to be thrown to the girl in red.  
Amidst all these, the day wore on  
While the great match was played and drawn!  
But yet not without a charge  
That the behaviour was bad of the boys at large!

And now if you come to hear  
Of a match like this and think it queer,  
Start enquiring without delay,  
The time, the venue and the playing day;  
For such events clearly portend  
That the world is heading fast it's end,  
Or else they mark the unhappy day  
When 'Eve' from earth shall have passed away!

—ANON.

—★—

## Could it, Should it, Did it, happen?

HERODOTUS, II.

THIS is about a nice, fat, hungry man. He got into his tweed suit and ambled up to the hotel. He had a hefty feed and was having a quiet smoke, when along came an imposing chappie with a glass eye and false teeth.

After having occupied the seat next to him, the new comer greeted him with a toothy smile, picking his teeth. Then in a sibilant whisper he told him, "I am the Zamindar of Zanzibar, I am in a tough spot. I find I have forgotten my purse at home. I would hate to borrow from any one, but you look a student. Can you lend me ten bucks? Here is my address" he passed an embossed visiting card—"I shall send on your cash by bearer tomorrow." Our hero parted with ten rupees. "Thanks old horse" said the man and walked away. Soon the waiter came with the bill and our hero searched his pockets and searched and searched—he pawned his pants and walked back to the hostel, cursing himself in his underwears!

Bah! No! No!! what happened was, he paid his bill and went home. He waited a week and in anger put on his tweed suit (the same old one) and walked to the address given to him.

A huge palace in a vast ground. He stood at attention, salaamed and was about to sing the National Anthem, when a man came up and asked him what he wanted. After a short wait he was led into a luxurious room where he found his friend of the false teeth and smile. They had tea and chatted on for a time.

---

"You must go now" said the man and bowed him out. Out went our hero tipping the bearer a rupee. At the bus stop he realised, his cash had not been returned. Muttering to himself he walked up to the Coom and threw himself in and drowned. Poor fellah!

Heh Heh Heh—Do you think it happened? No medical student ever commits suicide!

What happened was, the day after the hotel affair, he got a letter.

Dear friend,

I am not the Zamindar of Zanzibar. I needed money and thought you would not otherwise lend me the sum.

I am a visiting card salesman. I am sending you ten rupees worth of visiting cards with your name embossed on them.

Thanking you etc.,

Dear reader, You are upset. You would like to know what really happened?

*So would I!!!*

—★—

If you can't stand solitude, may be you bore others too.

★ ★ ★

Life is but a series of inspired follies.

—Shaw.

## Current Year

—YELLOW PRESS

THIS academic year has been like the other hundred and odd years before it—nothing very remarkable one or another. Perhaps the outstanding event was the new canteen with its Visit Spain, fly to Australia and Ice cream four annas!

As for the exams, we had to cheer the victors and console the victims telling them 'Every dog has its day'.

The cricket team flew to Ceylon. They also flew back from Ceylon. We also played hockey foot, volley and basket-balls.

The ladies beat up each other over a match of hockey. The staff retired champions in cricket.

Election days, deaths and taxes a man may not escape—Mr. Thomas Kuruvilla was elected President and Mr. Shahzada Khan was elected Secretary. We wish them luck.

Dr. Guthe of the W. H. O. came and assured us that 3 million units of P. A. M. was O. K. Dr. Rajam presided—we had the after noon off. At the hostel day (Men's) we were again exhorted to be self sacrificing, noble and uncriminal. We were asked not to rob widows and orphans—we must keep that in mind!

The next most sensational thing this year was the Eton crop-a-la 1923 which is now much in evidence among a progressive section of our lady students!

# Our Trip to Calcutta

T. S. RAMAMURTHY,  
*B.Sc. Pharmacy, Final.*

THE students of the B.Sc. Pharmacy class inaugurated their year by a study tour to Calcutta. The tour was undertaken to study at first hand the large scale manufacture of the various drugs and the manufacturing processes.

On 22nd September 1950 we left Madras for Calcutta by the Calcutta mail. After a long and strenuous journey of 38 hours we found ourselves in the vicinity of Calcutta. It was a Sunday, we were unable to visit any factory. The Secretary Y.M.C.A, Calcutta was courteous enough to provide us with comfortable accommodation. We spent the evening in exploring for a South Indian hotel and looking around the city.

On monday morning we took to business. The first factory that we visited was "The Bengal Chemical & Pharmaceutical Works" which is claimed to be the biggest of its kind in India. We were shown the various process of manufacture of a wide range of tinctures, tablets, ointments, injections and Biological products as well as chemicals and perfumes. In another branch of the B.C.P.W.. we saw the manufacture of heavy chemicals such as acids, ether. coal tar distillation products etc.

That evening we turned towards the beautiful new market, which has a glamour of its own and one can buy anything there. Some of us went out at night, photographing the numerous beautiful neon signs.

The next day according to prearranged programme we went to "All India Institute of Health and Hygiene", where we had an opportunity to see a number of mechanical devices among which the Beckman's spectro-photometer for assay of Vitamin A, attracted our special attention.



The Prize Distribution.

★

The Governor  
presided.

—V. Srinivasan, I. M.B.

Independence Day.

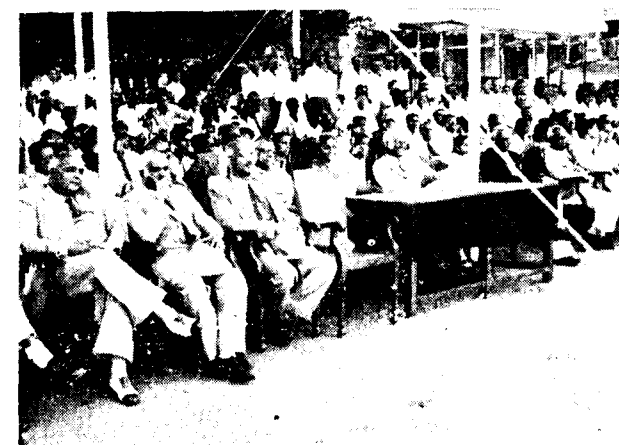
at Women's Hostel.  
—Fancy Dress Competition

★

What a sight!



—Ambli, V. Vi

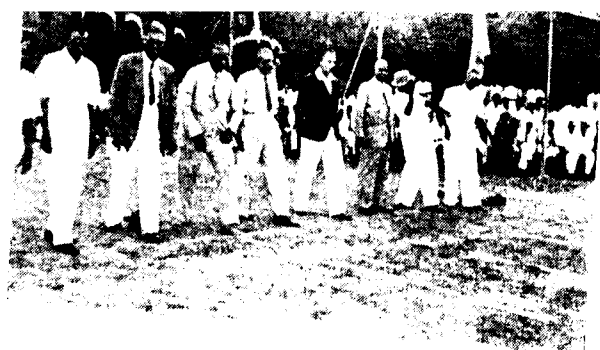


The Sports Day.

★

Armchair Sportsmen.

—V. Srinivasan, I. M.B.



Still with vigour of ye

D. Sundara Rao, I.H. M.B.



A shot from the Cannon.

V. Srinivasan, I. M.B.



The Cups that were cheered.

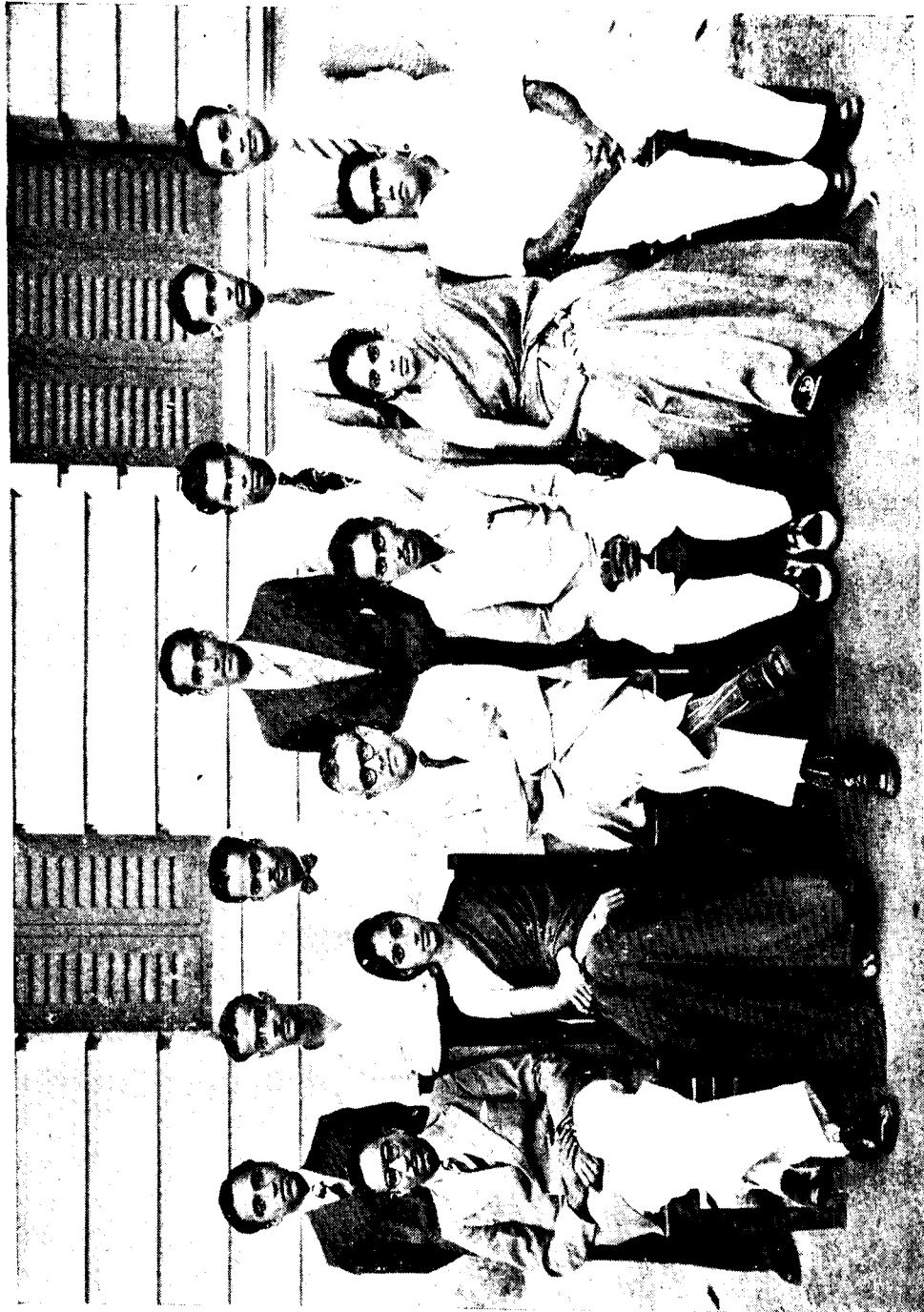
V. Srinivasan, I. M.B.

## SPORTS DAY.



-D. Sundara Rao, I.H. M.B.

The Judge and the Commentator.



Sitting (L. to R.)—Dr. V. P. Naidu, M.B.S., (Hon. Treasurer), Miss M. V. Shantha (Lady Rep.), Dr. R. V. Rajam, M.B., M.R.C.P., (Ex. Office-President), Mr. T. I. Williams (St. President), Miss A. V. Lakshmi Menon (Vice President), Mr. Ulloor P. Krishna Moorthy (General Secretary).  
 Standing (L. to R.)—Mr. Mr. M. P. Manomohan (III Year Rep.), Mr. T. S. Ramamurthy, B.Sc., (Pharm. Rep.), Mr. K. Thankappan, B.Sc., (I Year Rep.), Mr. K. C. Mohmed (Sports Secy.), Mr. Ghouse Mohmed (IV Year Rep.), Mr. C. Palaniswamy, B.A., (Asst. Secy.), Mr. P. C. Uttappa (II Year Rep.)

The next day we visited the Bengal Immunity & Co. Ltd., We were shown the horse stable, Bleeding room, and cold chambers where the immunised blood was kept for clotting & sera completed were stored. On the following days, we visited Eastern India Pharmaceutical Co., Union drug Co., Bathgate & Co. Ltd., and Smith Stanistreet & Co. Ltd., This last mentioned factory can Boast of huge disintegraders, mixers, sifters, ball mills, and edge. Runner mills in operation.

After visiting the factories in Calcutta, we left for Benares to visit the Hindu University there. After a 'dip' in the Ganges, washing away our sins, we went to the University and returned the same night to Calcutta.

All work over and being free birds, we turned our attention to places of interest. We visited the Victoria memorial, one of the finest monuments of the world. Then the museum, Zoo, Botanical Gardens the lake and Rama Krishna Mutt. The night we spent in visiting the numerous beautiful picture houses. On 4th of October we reluctantly left this gay city and bid good bye to its emotional people. Of course we never missed the idea of buying Ras Gollas.

On behalf of the Pharmacy students I thank Mr. S. Ramamurthi Asst. Prof. Pharmacognosy for his able guidance and leadership through out the tour. Our special thanks are due to our Dean and Prof. A. N. Ratnagiriswaran for the great encouragement they have given us and the trouble they took to make this tour possible.

Whether you believe you can do a thing or not, you are right.

To be wronged is nothing unless you continue to remember it.

# Annual Report of The Madras Medical College Assn. 1950-'51

ULLOOR. P. KRISHNA MOORTHY,  
*General Secretary*  
*Madras Medical College Association.*

*President sir, members of the staff, ladies and gentlemen,*

I have great pleasure in presenting the annual report of the Association for the year 1950-51.

The year began with the election of the rest of the office-bearers of the Association. The end of the previous academic year saw the election of the General Secretary and the Student President. For the Second time in the history of the Madras Medical College Association, the General Secretary got elected unopposed. Most of the other posts went uncontested except that of the First, Second, and Third year Class representatives, wherein keen competition prevailed. The spirit of co-operation and mutual understanding among the members of the Executive Committee furthered the progress of the Association.

**Our Activities:**—On the 9th August we had the unique privilege of having such a great personage as Dr. P. V. Cherian to inaugurate our activities for the year. He advised the young men to strive hard to raise the scientific standard of our nation.

We had the first general body meeting on 11th Aug. when Dr. D. S. Iyer, M.S. F.R.C.S., and Dr. V. P. Naidu, M.B.B.S. were unanimously elected as Treasurers of the Magazine Committee and The Association Committee respectively.

Then came the anniversary of our independence. As detailed by our great leaders we celebrated the day in a simple manner.

Aug. 23rd, was a red-letter day for us. We met the graduates of the year at the reception held in their honour. We were fortunate enough to have Dr. Paul Brand of the Vellore Medical College to address the graduates. The arrangements made for the tea and open air entertainment were superb. The success of the function was entirely due to the untiring efforts of the artistes and volunteers.

Side by side we had to turn the darker pages of the chapter. On too many occasions we had to assemble to express our sorrow at the loss of those near and dear to us. We had condolence meetings for Capt. Davidson David, an ex-member of our staff, Dr. Raghunatha Rao, an old student, and Messrs. M. C. M. Reddy, K. Subramonium, Austin Charles and Ramesh Chandra Bhatt.....Students of our College.

Later Dr. Mohanarangam, M.D., Asst. Professor of Pathology, addressed the members of the Association on the impressions of his western tour.

The Valedictory address of our Association was delivered by Dr. Guthae, Chief of the Venereal Diseases Section of the World Health Organisation.

We took part in the Inter university debate but we narrowly missed the trophy.

**The Magazine:**—The Vice President of the Magazine Committee and the General Editor worked their utmost to improve the standard of the Magazine. The first issue contained some original articles and articles of general interest. I venture to say that a little more co-operation from the members of the Association would have been a boon to the Editors.

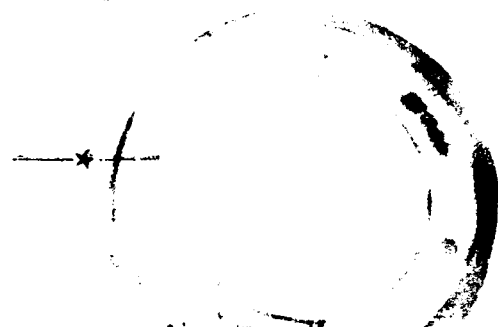
**Our Reading Rooms:**—Improvements in this line are taking place. At present we are getting, The Hindu, The Sport and Pastime, The Indian express, The Blitz, The illustrated weekly of India, Shankers Weekly, etc., for the reading rooms. It really pains me to no small extent to note the disappearance of the journals from the common Halls.

**Our Finance:**—We were able to build up a large amount by way of subscriptions, Donations and advertisements. The major part of this was utilised in connection with the Graduates Reception. I shall be failing in

Reddy is our mainstay in the defence. An extremely likable fellow, he is very calm and reliable in the defence and is a tower of strength to the team. Due to debilitating physical conditions K. T. Mathew couldn't play much this season; but during his career in this college he was one of our best full-backs. Shanmugasundaram, Gurupadam and Subramanyam all were doing their part really well for the team. And now about two of our boys who have passed out last December—Delip and Palaniappan. Delip, who captained the foot-ball team last year is a good left-extreme and he was assisting the team in his own inimitable way this year also, but due to an accident on the field he broke his tibia and was kept out of the team during the latter part of the season. Palaniappan kept goal for the team creditably well last year but since (according to him) old age is past scouring him up he thought it wise to retire. He says foot-ball is a game for the youngsters! Let me wish all of them the very best of luck in their future career.

Let me in this connection thank all my team-mates for their co-operation and support, without which nothing could have materialised—also the spectators and supporters of the team, who whatever may be the circumstances, throng in their hundreds to give a helping hand to the team by encouraging and cheering up the players. And lastly let me thank the Dean and the physical director for the encouragement they have given to the team in all its endeavours.

The team:—K. C. Mohmed, K. N. Subramaniyam, A. B. Ramachandra Reddy, Veluswamy, Kailasam, Balaram, Shanmugasundaram, Chandra, Madhavan, Viswanath, Gurupadam.



A friend is a present you give yourself.

## OBITUARY

We regret to record the untimely demise of Dr. Raghunadha Rao (old student), Mr. K. Subramaniam (final year), Mr. Austin Charles (third year) and Mr. Ramesh Chandra Bhatt (B.Sc., Pharm.) and convey our heartfelt sympathy to the bereaved families.

Cholecystogram may show a filling defect but no stones. The management of this condition is mainly medical, diet and disinfectants. The cutting of fat is not essential and if the patient can tolerate fats, give fats in small feeds and they do not do any harm. Every morning give a teaspoonful of magnesium sulphate dissolved in a tumblerful of warm water. Disinfect the biliary passages by giving 10 grains of Hexamine three times a day. Whenever hexamine is given keep the urine alkaline, as hexamine in an acid urine irritates the kidneys and will cause haematuria. If the symptoms are not relieved by the above treatment a cholecystectomy should be performed and is better to combine it with appendectomy.

**Obstruction due to gall stone:**—Obstruction in cystic duct is apt to cause acute cholecystitis; when the stone is impacted in the Hartman's pouch, it will press on the cystic vein and bring about rapid gangrene of the gall bladder. Impaction at the ampulla of Vater is not associated with acute cholecystitis. When infection is mild, the gall bladder is large and is filled with mucus or muco-pus. Rarely the stone presses on the neighbouring common bile duct and produces jaundice. This is an exception to Courvoisier's law. The treatment is surgical i.e., cholecystectomy.

**Obstruction of the common bile duct:**—This has to be differentiated from an obstruction due to carcinoma of the head of the pancreas. When gall stones obstruct the common bile duct the gall bladder is not enlarged; there is pain and the jaundice is intermittent due to intermittent cholangitis and oedema. The treatment is difficult, being complicated by severe pain, infection and jaundice. There is a great tendency to bleeding, liver is also damaged and cholaemia may set in. The preliminary treatment is therefore very important. Give fluids, Calcium, Vitamin K. and antibiotics. After 2 to 3 weeks of preparation, explore the common bile duct and if the patient is fit, remove the stone, do a cholecystectomy and drain the common bile duct.

**Stone in the ampulla of Vater:**—This may be responsible for acute pancreatitis, the diagnosis is not easy and the symptoms simulate acute perforated duodenal or gastric ulcer. The patient is in severe pain, he is collapsed from irritation of the coeliac plexus and cyanosed from diaphragmatic spasm as the inflamed pancreas lies over the crura of the diaphragm.

Make a diagnosis, when the shock is severe and there is not much rigidity, and once the diagnosis is made, treatment is on the expectant lines, namely, gastroduodenal suction, intravenous fluids, and chemotherapy. For the relief of pain give pethidine 15 mgms, three times a day.

**Fistula:**—External fistulae are rare, but internal fistulae occur. Gall stones have found their way through all passages, stomach and then vomited, renal pelvis and passed in the urine, subphrenic abscess bursting into the lung and then coughed up. The common fistula is from erosion into the bowel, the fundus opens into the colon and the neck into the duodenum. When the stone is passed into the colon it rarely gives rise to trouble, though obstruction is reported. If the stone is passed into the small gut and the stone is one or more than an inch in diameter, it gets impacted in the ileum and causes intestinal obstruction. These obstructions are very deadly and carry a 50% mortality. The condition occurs in very old people, of 70 to 80 years and is the oldest form of intestinal obstruction. Besides pain, vomiting, abdominal distension and constipation,—the cardinal symptoms of intestinal obstruction—are not very marked and treatment is delayed. But one symptom that is, constant and persistent vomiting is characteristically present. Therefore if in an old person, there is persistent and constant vomiting for more than 5 hours, in spite of medical treatment, think of gall stone obstruction. Treatment is laparotomy and removal of stone.

**Carcinoma of the gall bladder:**—This condition is always associated with gall stones. A lump is always present, only 5% are operable and in them diathermic excision should be done. The remaining 95% are too far advanced for treatment, from the presence of secondaries.

**Biliary colic:**—This has to be differentiated from intestinal colic and renal colic. In intestinal colic, the patient lies on his back, with his legs drawn up and the hands pressed on the abdomen, and writhes in pain. In renal colic, the patient lies on his side, the pain radiates down to the groin or testis and has severe strangury. In gall bladder colic, the patient is violently restless and may be ambulant. For the relief of pain give pethidine 15 mgm and combine with morphia if needed. The less morphia is given, the better it is for the patient.

**Cholecystectomy:**—About 2 to 5% the patient is unfit for operation. If the patient is given a months dietetic treatment and reduce his fat, gas and oxygen anaesthesia combined with curare is an ideal anaesthetic. High spinal is also very good, but it may give rise to neurological complications in exceptional cases. The intercostal muscles are paralysed

and this may cause lung complications. The patient is in the reversed Trendelenberg position on the table with the heels supported and the calf region free to avoid pressure. One of the dreaded complications is pulmonary embolism and every step should be taken to prevent this. A transverse incision is good but it will damage the 9th intercostal nerve. A right paramedian incision is equally good. If the gall bladder is distended, empty it by suction and rotate the liver so that its under surface looks upwards. The operation should be done neatly and carefully. Pack the foramen of Winslow so that blood or bile do not escape into the lesser sac. Divide the peritoneum over the cystic duct and isolate and expose the cystic duct, hepatic duct and common bile duct remembering the many anatomical variations that are likely to be met with in this region. Clamp and divide the cystic duct, ligature the proximal part and then separate the gall bladder with the help of the clamp on the distal portion of the cystic duct. The cystic artery will now come into view, and must be clamped, divided and ligatured. The operation field must be drained as leakage is to be expected in every case.

Cholecystectomy carries a mortality of 2% and death is due to complications and Pulmonary embolism.

Diathermic excision carries no mortality and has been found to be a safe procedure. There is no leakage and no drainage is needed.

The above few lines have been written with an idea that they may be useful to the senior students who are going for the examination. Gall stone and gall bladder diseases are relatively rare in South India and one does not get many chances to see them in the student career. I have therefore made an attempt to present the clinical manifestations of gall stones and their complications in a simple way to the average student.

Perhaps the most valuable result of all education is the ability to make yourself do the thing you have to do, when it ought to be done, whether you like it or not; it is the first lesson that ought to be learned; and however early a man's training begins, it is probably the last lesson that he learns thoroughly.

—T. H. Huxley.

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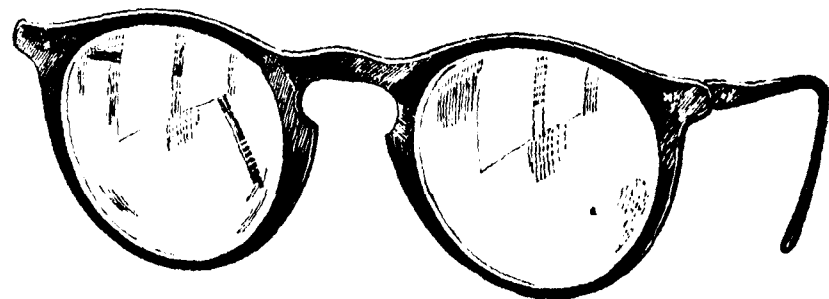
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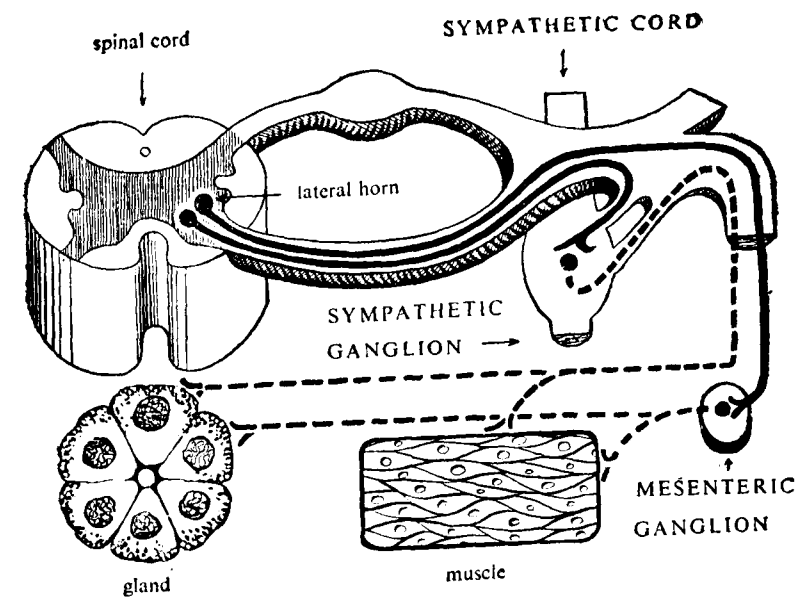
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In no way behind hand is the progress made in the field of *Public Health*. When food and education are on satisfactory level public health should not cause much anxiety to any nation. Nevertheless to see that none should suffer for want of attention when they are sick there are antenatal clinics, children's special nursery, children's health resorts and convalescent homes, convalescent homes for adults, visiting nurses and doctors for those who do not wish or cannot for any reason go to hospitals. In addition, for preventing venereal diseases and early detection of such diseases as Tuberculosis various institutions like the Central Tuberculosis Institute at Copenhagen are functioning, where mass radiology, blood examination etc. are done to find out the sick, segregate them and treat them at the expense of the State.

How does the state do all these? First of all, there is the health insurance scheme which contribute to part of the expenses. The rest is met by judicious taxation. When people get back in the form of social amenities, personal attention, educational facilities and treatment of sick persons, the money they pay as taxes the unwillingness to pay tax is not much. I need not paint the picture that exists in India. It is better imagined.

There is old age pensions and home for the old and maimed who cannot work. The average unskilled worker gets about 4 to 5 thousand Kroners per year. The maximum annual pay any body can get in Denmark is Twenty thousand Kroners. One Danish Kroner is roughly 3/4 of a rupee.

But the living cost is comparatively cheap as all essential food materials are cheap. The homes are all nicely built and there are many built by the state for the workers and middle class people for a nominal rent.

The politics of Denmark is a feature on which I have little to write. The king is popular and is the head of Government run by the elected representatives of people whose idea is to live in peace, a life according to their ideals without troubling others. Usually Denmark's policy is to be in line with Norway and Sweden without losing its independence.

During my stay of nearly two months I saw and learnt many matters of professional and scientific interest but what has impressed me most are the smiling faces of a contented well nourished happy people, the laughing healthy children and the most helpful nature of all towards strangers to their lands.

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If what I saw in the capital impressed me well, what I saw in the remote corners which I visited impressed me better: extensive areas of intensive cultivation with all modern facilities, the smallest hospitals with the most up-to-date equipment, small towns with all amenities for children's education, amusements and relaxation, roads everywhere in good condition, sea-side resorts, schools in far away corners all with almost same decent scale of equipment and staff as in cities. The state has taken it as part of its duty to provide quarters for the staff. A point which struck me because it is unusual in our country is the infrequency of transfer of medical personnel. A doctor in charge of the hospital makes his home in that locality, takes a pride in the proper working of his institute and rightly gives credit to all the staff for the various duties that are allotted to them. No credit is given by the state for curtailing the expenses but credit is given for making the maximum use of the allotment given. The usefulness of a medical institution is measured by the sense of well being and satisfaction it gives to the population it serves. The expense is only of secondary importance if the former can be achieved. To a statement that patients can get treated cheaper by indigenous system than allopathy, the Prime Minister of India Sri Jawaharlal Nehru is reported to have replied to the effect that it is even still cheaper to die. It is far better and cheaper to close down institutions which cannot be properly maintained than maintain institutions understaffed and ill-equipped.

It may be remarked that Denmark has achieved all she has done because she is a small nation of four million people. What she has achieved, a larger nation with greater resources must logically achieve in less time. Can we not do it? We can; if we have confidence in our ability, trust in our neighbours and if we can be honest and sincere in all our actions and considerate and kind in our behaviour.

—★—

Private opinion creates public opinion. Public opinion overflows eventually into national behaviour; and national behaviour as things are at present, can make or mar the world. That is why private opinion, and private behaviour, and private conversation are so terrifyingly important.

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France, Belgium and Holland and yet visibility was poor and so aerial observation of the coastal countries, which I was looking forward to, was not possible. We were received at the aerodrome at Copenhagen and taken to the 'Docton's College' where we were comfortably lodged and looked after.

My first impressions after reaching Copenhagen were that, unlike England, food was plentiful here. Denmark is a country of milk and meat (not milk and honey) - No drinking water is kept usually but milk is taken in large quantities by all. The city has a population of about a million and is very much modern in every way. There are several hospitals, all fully and very liberally equipped and staffed. There is a state university with distinguished professors. There is a Serum Institute, the pride of Denmark, where a lot of distinguished men and women do brilliant work. There there is no stint of materials and mind to do good work. There is a National Museum, with beautiful works of arts all collected from various parts of the world at great expense, and given to the state by the "Beer King", a standing example how the best use can be made of money made by encouraging even drinking habits. Within a few miles of the heart of the city there is an extensive park, a real park with plenty of trees and plenty of wild deer where one can feel oneself 'away from the madding crowd'. It is a pity that in India our ideas of maintaining a park are rather different.

Denmark has extensive coast line and has several islands. Fishing is one of the important occupations and sources of revenue for the state, although agriculture is the more important. Industry occupies an essential position in her natural economy. About a fifth of national income is from industry and about a third of the total population is employed in industry. The complete domestic need of many "consumer goods" is met by this industry, thereby effecting a great national saving. A country without the usual requisites of raw materials like coal, oil and iron should be given full credit for the hard work and intelligent co-operation and co-ordination of the people which have resulted in the industrial progress Denmark has made. 'A well educated population, skilled workers and commercial insight' have built Danish Industry. This could easily be a lesson to us in India as to what can be achieved if there is a will to do so. In ship-building industry particularly in Diesel Ship, Denmark plays an important role.

Denmark's *Agriculture* is the envy of her neighbours and the mainstay of hers and her neighbours' food problems—About a million of Denmark's 4 millions of people are engaged in agriculture. All the

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improvement has taken place during the past 150 years. This progress has been the results of (1) the recognition of the 'rights of man' and (2) wise statesmanship. Individuals respect for the community and community's respect for the individual are both simultaneously required in sustaining Democracy. Denmark can teach this lesson to all those nations who are willing to learn from her.

Danish *Co-operative Movement* has been also responsible for the proper marketing of the food products to her neighbours. This has improved the self-esteem of the Danes as well as their esteem in the world. Danish eggs, milk-products and Danish bacon are considered to be some of the best the world has produced. The practical farmer works hand in hand with the scientist, a feature I found also in Palestine in the Jewish colonies.

It is worthwhile studying the progress of *Education* in Denmark. Obligatory primary education was started in 1814 making it obligatory on the parts of parents to get their children from six to fourteen years, educated in public and private schools or at home. The aims of the primary school according to the authorities in Education in Denmark are among others:—(1) It should develop and strengthen the pupils' sense for ethical values (2) teach them respect for human life and nature, and affection for their home and people and country, respect for the opinion of others, a feeling for the fellowship of nations'. There is ample evidence that these aims have been achieved.

There can be no greater ideal in the education of people of any country. It is the cornerstone of the edifice of progress for any nation. We are sadly reminded how barren we are even in this field how even several of our so called educated persons forget most of the above ideals.

University Education in Denmark is free and many of the students can do paid work to help them on for most of their other expenses.

Another feature of Danish educational progress is the voluntary non-vocational school for young men and women by means of folk High School and evening school.

I have given in some details some of the essential features of progress of modern Denmark to show how in about a hundred years from almost nothing by way of resources a small but strong well-knit nation has come up in the world, enjoying much respect from others and giving much help to all its neighbours. But it must not be forgotten that Denmark has a long history.