VOL. I. NO. 1.

1948

The Chest-Piece

THE JOURNAL OF THE BRITISH MEDICAL STUDENTS' ASSOCIATION
(Malta Branch)

CONTENTS

THE BRITISH MEDICAL STUDENTS' ASSOCIATION

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EDITORIAL

THE publication of this first number of "The Chest-piece" marks an important step forward in the work of the Malta Branch of the British Medical Students' Association. Ever since its foundation some six years ago, the Association has constantly kept in mind the possibility of publishing a journal in which its own policy could be outlined and the views of its individual members adequately expressed. It is only now in 1948 that this great aim has been achieved and the Association is proud in presenting to the Medical profession as well as to the general public this journal which is concerned with Medical and Allied Sciences.

"The Chest-piece" carries with it an appeal for Unity, Peace and Comradeship to all, but especially to the Medical Students, who in future years as practising physicians will form part of that world-wide profession —Medicine. There must be Unity, because Medicine follows everywhere the same methods, is actuated by the same ambitions, and pursues the same ends. There must be Peace, because the physician has three great enemies — ignorance, apathy, and vice, which he must fight not with anger but with patience and persuasion. There must be Comradeship, as an active co-operation during student life removes the chances of rivalry and professional jealousy developing later on in life; for as Plato says: "Envy should never for a moment afflict a man of generous instincts who has a sane outlook on life".

In this first number of this journal the "Hippocratic Oath" is published in its entirety. This noble code of ethics has been adopted as a pattern by medical men throughout the ages. The follower of Hippocrates is shown the dignity as well as the great responsibility of his calling; he is encouraged to maintain professional secrecy; to seek above everything else the benefit of his patient; to take no mean advantage of his position as medical adviser; and the graduate is shown that it is his duty to respect his University.

This first issue of "The Chest-piece" contains articles by such well known local physicians as Professors J. E. Debono, W. Ganado, and J. V. Zammit Maempel.

Professor J. E. Debono in his article "The Psychosomatic Approach in Medicine" clearly evolves the clinical fact that strong emotions do cause dramatic changes in bodily functions. Schwarz and Draper have contributed greatly to this new field of Medicine; in fact it was the latter who introduced the term 'Psychosomatic' to this new study which has as its aim the understanding of how a stimulus produces a symptom, and which solves out the causal relations between the stimulus and the symptom. Professor J. E. Debono's contribution comes at an opportune moment. In this age of swift material progress the old concept that the human being is "a person besides being a collection of organs" (S. Cobb) is apt to be forgotten. The writer rightly points out that "good" Medicine, well practised, can only be achieved if the physician conceives the human organism as a working unit, "a person", liable to be influenced by the external surroundings and by psychological and social causes.

"The Local Use and Abuse of Minerals and Vitamins" is the theme of Professor W. Ganado. The writer, a physiologist, rightly maintains that the primary health need of a community must always remain environmental. The secondary need, secondary only

because it cannot precede an appropriate environment must always be the personal nurture and health of the people themselves, a nurture which begins nine months before birth and is continued to the end of life. Professor Ganado alludes to the fact that habit in Malta remains second nature, and as a consequence the physician cannot often do what is best. True economy and common sense are among the forces which can most wisely apply the verities of the Science of Medicine to the needs of men.

Professor J. V. Zammit Maempel writes on the "Recent Advances in the Treatment of Blood Diseases". The writer mentions the highly efficacious treatment by therapy, with liver and stomach preparations, with folic acid or with iron, in the nutritional macrocytic and in the hypochromic anaemias, respectively. In thrombocytopoenic purpura as Professor Zammit Maempel maintains splenectomy is the only measure effective; while in the control of infections especially those secondary to Leukaemia, Agranulocytosis, and Aplastic Anaemia, the sulphonamides and penicillin deserve further trial. Irradiation, though a palliative, is often valuable and it has now been recognised that in the chronic leukaemias small amounts of it are of a safe and valuable nature. The writer also mentions Radioactive Phophorus, which being another form of irradiation, has a good effect in Leukaemia. Transfusion, a passive form of therapy, is finding its place in the modern treatment of thrombocytopoenic purpura and of haemophilia: in the former platelets can be added temporarily to the blood stream while in the latter the clotting time of the blood may be temporarily reduced by such a procedure.

Doctor A. Lanfranco describes the clinical and post-mortem findings in his contribution "The Heart in Hyperthyroidism". He stresses the necessity of bearing in mind the possibility of Thyrotoxicosis in all cases of Myocarditis with a doubtful aetiology. The need for this is further increased by the fact that heart manifestations may be found in Thyrotoxicosis in the absence of other classical signs.

The magazine also includes a report of the activities of the B.M.S.A. during the current year, as well as an account of the International Students' Clinical Congress held in England last June, at which the Malta Medical Students were represented by the President and Librarian of the Association. The only student contribution comes in the form of a description of the chief clinical findings in Cerebral Vascular Accidents, as illustrated by two case reports, one on Embolism and the other on Thrombosis in the Cerebral vessels.

The policy of "The Chest-piece" is to preserve in its pages an even balance between the articles submitted by members of the Faculty and those forwarded by students; unfortunately the response by the latter has been negligible and in this issue the scales have been turned in favour of the former. May it be emphasised that we will gladly welcome to the pages of "The Chest-piece" those amongst us who have not expelled the Muse from their midst.

The secret of education lies in respecting the student.

EMERSON.

THE HIPPOCRATIC OATH

"I swear by Apollo the Physician, by Aesculapius, by Hygeia, by Panacea, and by all the gods and goddesses, making them my witnesses, that I will carry out according to my ability and judgement, this oath and this indenture. To hold my teacher in this art equal to my own parents; to make him partner in my livelihood; when he is in need of money to share mine with him; to consider his family as my own brothers and to teach them this art, if they want to learn it, without fee or indenture; to impart precept, oral instruction, and all other instruction to my own sons, the sons of my teacher, and to pupils who have taken the physician's Oath, but to nobody else. I will use treatment to help the sick according to my ability and judgement, but never with a view to injury and wrong-doing. Neither will I administer a poison to anybody when asked to do so, nor will I suggest such a course. Similarly I will not give to a woman a pessary to cause abortion. But I will keep pure and holy both my life and my art. I will not use the knife, not even, verily, on sufferers from stone, but I will give place to such as are craftsmen therein. Into whatsoever houses I enter, I will enter to help the sick, and I will abstain from all intentional wrong-doing and harm, especially from abusing the bodies of man or woman, bond or free. And whatsoever I shall see or hear in the course of my profession, as well as outside my profession in my intercourse with men, if it be what should not be published abroad, I will never divulge, holding such things to be holy secrets. Now if I carry out this oath, and break it not, may I gain for ever reputation among all men for my life and for my art; but if I transgress it and forswear myself, may the opposite befall me."

Message from the Vice-Chancellor, Professor J. Manchè, to the B.M.S.A. (Malta Branch) on the occasion of the first issue of "The Chest-piece".

"Disciplina medici exaltabit caput illius, et in conspectu magnatorum collaudabitur."

(Eccl. XXXVIII v.3)

That the Malta Branch of the British Medical Students' Association should, just a few years after its institution, feel the need for and find the means of publishing a Journal of its own, is convincing evidence of the rapid and healthy growth of this Association, and of the fruitful results that it has been achieving.

The birth of this new Journal is very warmly welcomed. Not only will it afford a means of recording the results of the untiring efforts of the Members and Collaborators of this Association, but it will prove a great incentive to our young medical undergraduates to join, even at such an early stage of their medical career, the army of research workers of all nationalities in the unrelenting fight against disease and physical disability, which afflict humanity—a fight in which Medicine has of late been crowned with victory in many a major battle.

Convinced that it will enhance the study of Medicine and allied Sciences, that it will spur medical students to the exercise of those human qualities that are noblest and highest in the sight of the Creator, and in the esteem of our fellow men, I wish this Journal every success.

J. A. MANCHE'.

A NEW EPOCH

With the appearance of this first number of our Journal there happily also appears amongst us as head of The Royal University of Malta a new Rector, one whom we have known of old as Professor J. Manchè, but whom we now hail as Rector Magnificus, and long may it please God that we shall hail him so.

By Courtesy of Cassar—Hamrun.

Professor Manchè, born in Valletta on the 13th August 1899, is the son of the late Surgeon Lt. Col. Charles Manchè B.A., M.D., and grandson of the late Surgeon Col. Professor Lorenzo Manchè M.D., the first Professor of Ophthalmology in the University of Malta. Professor Manchè, educated at Stella Maris College, entered the University in 1915 and joined the Preparatory Course of Theology 1915-17. In 1918 Professor Manchè joined the Preparatory Course of Medicine and Surgery, the Course of Pharmacy, and the Academical Course of Science. He obtained the Diploma of Pharmacist in 1921, received the Degree of Bachelor of Science in 1922, and graduated in Medicine and Surgery in 1925. During his student days Professor Manchè was an active member and later Vice-President of the Students' Representative Council.

From 1925-1927 Professor Manchè acted as Resident Medical Officer at the Central Hospital. In 1928 he was appointed acting Professor of Physics and Demonstrator in Experimental Sciences, which included Physics, Chemistry, Physiology and Hygiene. From the time of graduation to 1937 Professor Manchè exercised his profession as a general practitioner until he was appointed Senior Medical Officer in the Medical and Health Department, a post which he held up to the 30th Sept. 1948.

In June 1943 Professor Manchè was appointed ad interim Professor of Physics in the Royal University. In 1944 his name was recorded in the Malta Government Gazette for exceptionally meritorious and devoted service during the last War. Professor Manchè's profound knowledge of Physics earned him in 1946 the Fellowship of the Physical Society of Great Britain.

Since 1946 Professor Manchè has been Chairman of the Executive Committee, Malta War Memorial Hospital for Children, of which he was previously a member. In 1947 Professor Manchè became Rover Scout Leader of the Royal Malta University Rover Group.

The University, ever rich in men of learning, dignity, and wisdom, was never so honoured as now in welcoming to the head of its councils the fine professorial figure of

Professor Manchè, whose long connection with the University, unbounded dignity, and deep interest in all that concerns the welfare of the Alma Mater, and of the students composing it, augur a future of happiness, harmony, and progress in all the branches of learning of which our University is the fountain and head.

Professor Manchè undoubtedly protrays the qualities which Cardinal Newman speaks of in his "Portrait of a Gentleman":

"He knows the weakness of human reason as well as its strength, its province and its limits".

".....it is my duty to say a few words of encouragement and to bid you, in the name of the Faculty, God-speed on your journey.....

In the first place, in the physician or surgeon no quality takes rank with imperturbability, Imperturbability means coolness and presence of mind under all circumstances, calmness amid storm, clearness of judgment in moments of grave peril, immobility, impassiveness, or, to use an old and expressive word, phlegm. It is the quality which is most appreciated by the laity though often misunderstood by them; and the physician who has the misfortune to be without it, who betrays indecision and worry, and who shows that he is flustered and flurried in ordinary emergencies, loses rapidly the confidence of his patients. In full development, as we see it in some of our older colleagues, it has the nature of a divine gift, a blessing to the possessor, a comfort to all who come in contact with him.....

In the second place there is a mental equivalent to this bodily endowment, which is as important in our pilgrimage as imperturbability. Let me recall to your minds an incident related of that best of men and wisest of rulers, Antoninus Pius, who, as he lay dying, in his home at Lorium in Etruria, summed up the philosophy of life in the watchword, Aequanimitas. As for him, about to pass flammatia moenia mundi (the flaming ramparts of the world), so for you, fresh from Clotho's spindle, a calm equanimity is the desirable attitude.....One of the first essentials in securing a good-natured equanimity is not to expect too much of the people amongst whom you dwell. 'Knowledge comes, but wisdom lingers,' and in matters medical the ordinary citizen of today has not one wit more sense than the old Romans..... ...Deal gently then with this deliciously credulous old human nature in which we work, and restrain your indignation, when you find your pet parson has triturates of the 1000th potentiality in his waistcoat pocket, or you discover accidentally a case of Warner's Safe Cure in the bedroom of your best patient. It must needs be that offences of this kind come; expect them, and do not be vexed.

.....Gentlemen, —Farewell, and take with you into the struggle the watchword of the good old Roman — Aequanimitas.

Aequanimitas, Sir William Osler. Valedictory Address, University of Pennsylvania, May 1, 1889.

The Psychosomatic Approach in Medicine

By J. E. DEBONO B.Sc., M.D., F.R.C.P.
Professor of Medicine

"The influence of the mind on the body" and "mens sana in corpore sano" are old, well-known and even trite expressions but many practitioners fail to recognize the extent to which psychological factors can aggravate and even produce bodily disease. Vice-versa they do not appreciate the equally important influence of bodily disorder and defect on the patient's mentality.

That strong emotions such as fear, anger, disgust can produce tachycardia, palpitations, temporary rises in blood pressure, a sinking in the stomach, nausea and vomiting is universally realized, but that worry, frustration and resentment can be responsible for such *organic* diseases as gastric ulcer, ulcerative colitis, glaucoma and rheumatoid arthritis is not so well-known.

Brought up in an atmosphere of morbid anatomy, of microbes and toxins, preoccupied throughout his studies with the patient's body to the exclusion of his soul the average practitioner cannot help developing a frankly materialistic attitude towards disease. Consciously or unconsciously he divides diseases into two distinct groups, the physical and the mental. With the mental he is not concerned. For the physical diseases there must be a material cause. If he cannot find it he seeks refuge in the myth of focal sepsis and intestinal intoxication, oblivious of the fact that there are millions of people with septic teeth and enlarged tonsils and constipated bowels, who make no complaints. The number of teeth, tonsils and innocent appendices that are removed every year and the tons of cathartics that are consumed are an eloquent testimony to the prevalence of this attitude.

Gradually however it is being realized that persistent emotional disturbances — the feeling of insecurity, repressed hate, worry, anxiety, frustration — unhappiness in fact, may be as potent in the production of disease as the over-incriminated streptococcus. Gradually the medical profession is returning to the old philosophic conception as an integral unit — a person — composed of psyche and soma, which cannot be separated nor considered separately — that there is an intimate connection between the two, via the thalamus and the hypothalamus — that when one is disturbed the other cannot be at ease — that sustained emotional disturbances can produce permanent physical disorder. Gradually a group is being sorted out, in which it seems likely that the most important etiological factor is psychological disturbance, a group of diseases, which are called psychosomatic to emphasize the psychological cause and the somatic manifestations. Gradually a new school of medicine is emerging which insists on the importance of psychological, social and environmental factors in the production and modification of all diseases and directs attention to their correction. The name Psychosomatic, by which this school calls itself is new, but its principles and its technique are as old as Hippocrates and have been practised by all good physicians since his time.

The list of psychosomatic diseases is a fairly long one and includes such common affections as bronchial asthma, essential hypertension, migraine, many forms of dyspepsia amongst which gastric ulcer, cardiospasm, diarrhoea, spatsic constipation, mucous and ulcerative colitis, vertigo, impotence, dysmenorrhea, thyrotoxicosis, neuro-circulatory asthenia, urticaria, and many forms of "fibrositis" and of headaches formerly thought to be of rheumatic origin. As one can see this selection includes a high percentage of the cases, that the average practitioner sees in his daily practice. Rare conditions considered to be of psychosomatic origin are Raynaud's disease, peri-arteritis nodosa, regional ileitis, mega-oesophagus and mega-colon, psychogenic fever, anorexia

nervosa, certain forms of hypopituitary obesity, hyperventilation tetany, enuresis and retention of urine, rheumatoid arthritis, the neurodermatoses, psoriasis, glaucoma, vaso-motor rhinitis and chronic pharyngitis.

It is not claimed that all the conditions just enumerated are always and exclusively due to emotional stresses and strains, but there is little doubt that these stresses and strains play an important part in the etiology a part which is sometimes paramount and sometimes contributory. In many cases the connection is obvious as the disability (e.g. asthma) recurs whenever the patient is faced with the same difficult situation. In others it is more remote but patient investigation soon reveals a sufficient cause. The part that emotional disturbances play in the production of these diseases is also shown by the improvement that follows appropriate treatment in the form of rest, re-assurance, sedation, explanation, elementary psychoanalysis, advice and the smoothing out of difficulties.

In the case of the stomach there is visual evidence to confirm the hypothesis that emotional disturbances can produce visible organic changes culminating in ulceration and haemorrhage. In a patient with an old-standing gastrostomy, Wolff and Wolff were able to observe, repeatedly, that anger and resentment induced immediate hyperaemia of the mucosa, with hypersecretion and hypermotility. If the protecting mucus was removed tiny haemorrhages appeared, which no doubt would have proceeded to ulceration if the irritation of the patient had been kept up long enough.

The mechanism of production of these psychomotor disorders would seem to be a state of hyperactivity of the autonomic nervous centres in the hypothalamus, stimulated, and as it were, driven mad, by constant messages and impulses from the overlying thalamus — the headquarters for the reception of all sensations and probably the centre for the emotions. In the case of gastric ulcer there is overstimulation of the vagus, which continues acting even when at rest and especially during the night. In the case of Raynaud's disease there is sustained vaso-constriction of the arterioles of the upper extremities to such an extent that gangrene occurs and so on through the whole series.

A curious and inexplicable feature is that the same set of emotions produces different effects in different individuals; palpitations in one, asthma in another, dyspepsia in a third and urticaria in a fourth. The localization of the symptoms may possibly have a symbolic significance, but it is more probably due to the existence of a locus minoris resistentiae at that particular moment. Thus in a patient I had under treatment the first symptom of emotional distress was a long period of insomnia, followed after a short interval of well-being by an obstinate constipation. Eventually the patient contracted influenza and bronchitis. The constipation passed away and was replaced by an asthma, which resisted all attempts at medicinal treatment but disappeared when the patient was psycho-analysed and her difficulties were smoothed away.

The inclusion of "fibrositis" amongst the psychosomatic diseases may occasion some surprise but there is evidence that in many cases, so-called fibrositis is the result of nervous tension. Anxiety, fear, resentment cause contraction of all the muscles — the victim is ready to fight — he goes about with his shoulders hunched — his head bent forward — his chin thrust out — his hands clenched. Is it a wonder if the maintenance of this unnatural tense position for any length of time produces cramps and muscular pains — lumbago, pains between the shoulder blades, tender nodules in the trapezius, pains in the wrists, ankles, elbows and sometimes even the knees? In the same way occipital headache, the pain over the vertex and in the temporal region so often seen in tense nervous subjects are due to sustained contraction of the trapezius, the occipito-frontalis and the temporales muscles and not to any fibrositic and rheumatic nodules as was formerly supposed.

It is impossible to cover the whole field of psychosomatic medicine in one short article. In reality one cannot do more than mention its existence and hope that the reader's interest will be stimulated to consult the vast and interesting literature that has already accumulated. As usually happens, there has been a certain exaggeration of the importance of psychological factors. There is the great danger of paying too much attention to emotional factors and of overlooking organic disease until it is too late. Thus constipation may be attributed to spasm of the colon and this in its turn to a lack of understanding between husband and wife, whereas in reality it may be due to a carcinoma, or a pruritus ani may be diagnosed as a neurodermatosis, when it is the first sign of a prostatic neoplasm. In all things it is necessary to keep to the *via media*. Psychosomatic medicine offers a strong temptation to the lazy practitioner to diagnose psychosomatic disorders from the patient's history alone, without passing to a thorough physical examination and carrying out all the necessary investigations. This temptation must be resisted at all costs, but the existence of this danger must not blind us to the fact that psychosomatic diseases do exist and must be treated in an appropriate manner.

One last word — the necessity of investigating psychological, social and environmental factors is not limited to the so-called psychosomatic diseases. The psychosomatic approach must be applied to all diseases. Every patient must be considered individually — as a person. Practically every disease — even such obviously organic diseases as pneumonia and appendicitis — has its psychological component. The brusque and hurried physician or surgeon, who diagnoses, prescribes or operates without considering the patient as more than a case, may possibly save the patient's life, but will leave behind an indelible psychological trauma and will not be living up to that ideal definition of the doctor as "the guide, philosopher and friend".

It is perhaps because of this, because we have become too scientific, more interested in the disease than in the patient, that as a class we are losing the trust, respect and love of our patients.

CONTRIBUTIONS

All members of the Medical Profession and all Medical Students are invited to contribute to "The Chest-piece". Correspondence and contributions should bear the signature of the author and should be addressed to:

The Editor of "The Chest-piece"
117 St. Paul's Street
Valletta.

The Activities of the Association

February-August 1948

The Annual General Meeting for the Year 1947-1948 was held on the 4th February 1948. After the reading of the minutes of the previous Annual General Meeting, the President, Mr. S. Muscat, addressed the meeting and appealed to both Junior and Senior Students to join and support the Association. The Hon. Secretary then gave a report on the activities of the Malta Branch during the year 1947-1948. Officers were then chosen to conduct the election of nine students to constitute the Council for the year 1948-1949. A few days later the Council had the satisfaction to see that the President's appeal for membership had a good response, and the Association now represents by far the great majority of the Medical Students both in the Senior and Junior Courses.

The Council held its Inaugural Meeting as soon as the Annual General Meeting was over. Following the election of the Officers of the Council, Professor J. E. Debono was unanimously elected Director of the Association. A motion of thanks to Professor J. Ellul for services rendered while he was Director of the Association was proposed by the President and passed nem. con.

At its sitting of the 28th February the Council nominated three Graduates of the Medical Faculty, Honorary Members, in appreciation of their valuable contribution to the welfare of the Association. Two of the Honorary Members, who had formerly been Directors of the Malta Branch, are Professor P. P. Debono and Professor J. Ellul. The other Honorary Member is Dr. V. Captur, the Founder and one-time President of the Branch. This was the first instance on which the Association conferred this title.

A new feature of the Association's activities was a Clinical Meeting held at St. Luke's Hospital on the 18th March. The Meeting was presided over by Professor J.E. Debono and attended by Senior Students and Resident Medical Officers. A detailed case report was read by two students. After prolonged discussion as to the possible diagnosis, Professor Debono wound up the Meeting.

The showing of Medical films provided yet another instance of the Association's active work, the first show taking place on the 5th March. The films were kindly lent by the local representative of Messrs. Borroughs and Wellcome Ltd. and by the Propaganda Officer of the Ministry of Health.

Of the several petitions addressed to the Council of the Royal University by the Association on behalf of the Medical Student Body two were of great importance namely the granting of financial aid to the would-be delegates to the Students' International Clinical Congress, and the amendment of Article 21c of the Regulations of the Royal University which deals with the sessions of the Final Examination leading to the Degree of Doctor of Medicine and Surgery.

The inclusion of the posts of Librarian and Ass. Librarian in the composition of the Council has had a good effect. Several new editions of well known textbooks have been added to the Association's Library which includes also the current periodicals of Medical and Scientific interest.

A series of lectures was given under the auspices of the Association. In the first lecture "The Doctor through the Ages" given in two parts by Professor J. E. Debono the gradual development of the Science of Medicine was traced from its early days down to the present times, and the Medical Practitioner of today was gradually moulded out of the primitive medicine man, by the speaker. The lecture proved to be of great educational value. Members added to their knowledge of the Physiology of the Heart when Professor W. Ganado delivered two lectures on Electrocardiography. The lectures

given on the 17th and 31st March included an interesting account of experimental work which the lecturer himself had carried out during his stay in England. On the 3rd April Professor P. P. Debono spoke on "Medical Practice Here and Elsewhere" at the Royal University Union. The lecture included historical notes on the Continental Universities with particular reference to the origin of our Medical School and to its descent from the School of Salerno. The lecture proved to be most interesting but Professor Debono's reference to the local introduction of a National Health Service was not too enthusiastically received. On the 21st April Professor C. Zahra Newmann spoke on "Congenital Heart Disease". In his characteristic persuasive way he explained clearly the congenital lesions met with in the heart, projecting by the epidioscope several diagrams of the foetal and child's heart drawn by himself. The lecturer made reference to the successful operation on a patient with a patent ductus arteriosus carried out recently by Professor P. P. Debono. Another lecture was delivered on the 28th April by Professor J. V. Zammit Maempel, the "Recent Advances in the treatment of Liver Diseases" being the subject. The audience was given an up-to-date account of the latest developments in liver therapy and was struck by the thorough and exhaustive way in which the lecturer dealt with the subject.

Dr. A. Lanfranco closed the Series of Lectures on the 10th May when he spoke on "The Interpretation of X-ray Findings". The lecturer painstakingly described a number of X-ray films and thus correlated them with the didactic part of his talk maintaining a keen interest throughout in all those present.

The Association's activities were further enhanced by the fact that the Malta Branch of the British Medical Association always invited the Senior Medical Students to attend their Clinical Meetings as well as their Lectures and Discussions.

On Monday the 10th May the President and Members of the Malta Branch of the British Medical Students' Association gave a Luncheon at the Hotel Phoenicia in honour of Professor J. E. Debono on the occasion of his being elected a Fellow of the Royal College of Physicians of London. The President in proposing a toast to the distinguished guest remarked that according to the Statute of the London College, the Fellowship is conferred "on those only who are distinguished by character and learning", and that such attributes rightly fit the Director of the Association — the recipient of such an honour. In replying, Professor Debono expressed his readiness to help in every possible way the members of the Association.

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But nothing is more estimable than a physician who, having studied nature from his youth, knows the properties of the human body, the diseases which assail it, the remedies which will benefit it, exercises his art with caution, and pays equal attention to the rich and poor.

VOLTAIRE.

Local use and abuse of Minerals and Vitamins.

By

W. GANADO B.Sc. M.D. M.R.C.P. B.Sc. (Lond.)

Professor of Physiology and Biochemistry

The importance of the environment in Medicine is recognised universally; yet it is often forgotten by the medical practitioner. There is at present a craze for prescriptions of Calcium and Vitamins, with little consideration as to whether the material can be supplied equally well by the environment at no expense. When the cost of living is high, every shilling counts in the budget of a family with a low income.

There is in fact the possibility of obtaining full amounts of Vitamin D by simple exposure to clear sunshine. The uses of costly artificial ultra-violet rays or of Vitamin D concentrates by mouth are only substitutes for use in countries where exposure to sunshine is short or where the atmosphere is not clear enough. In Malta artificial methods can, and should, be restricted to cases where exposure to sunshine is insufficient or impracticable. Rickets does exist in Malta too; before encouraging the use of costly Vitamin D concentrates, the possibility of using sunshine as a preventive and curative should be explored further. It may be a wise step if the public funds directed to subsidise unnecessary Vitamin D preparations should be diverted to help organising research in the social causes of local Rickets. Most of the Rickets is the effect of traditional fear of exposure to sunshine, of excessive clothing and of bad housing. The prescribing of Vitamin D concentrates is a costly and short-sighted substitute to an intelligent and painstaking drive to improve the education and habits of the mother.

Vitamin A concentrates are equally wasteful. Clinical evidence of Vitamin A deficiency is locally non-existent. Vitamin A can be obtained cheaply and adequately through foods in widespread local use, as tomatoes, tomato-paste, several vegetables etc. The liver can build a good store of the Vitamin to last several months, so that a low intake during some part of the year is not harmful.

The water-soluble vitamins present quite a different picture. It is probable that some of them, Riboflavin in particular, are deficient in the diet of many families with a low income; yet the water-soluble vitamins are the least prescribed in Malta, possibly because we hear less about them from the literature of other countries or from commercial propaganda.

In discussing the use of medicinal Calcium, first consideration goes to the diet. An investigation into the household expenditure held in October 1946 has shown that a Maltese average household, with an expenditure of £2-8s.-5d. per week on food, consumed an average of 14,308 Calories per day with a content of 3 gms. of Calcium. Further amounts of Calcium must have been taken with tap-water which contains 57 mgms. per litre. The amount of water ingested is usually computed as 1 millilitre of water per calorie of food consumed, but the amount can even increase to five-fold during work or in hot weather. An ingestion of 1.5 millilitre of water per Calorie (inclusive of water contained in prepared foods) would give an intake of Calcium to the average household of 1.2 gm. of Calcium per day. The resulting total of at least 4.2 gm. per day equals the optimum requirement of a family of five.

Apart from the fact that the average Maltese family numbers more than five persons, it is probable that the per head con-

sumption of Calcium-rich foods (cheese, milk, pulses, small fish, etc.) falls in inverse ratio to the size (and poverty) of the family. Pregnancy and lactation call for extra calcium to meet the requirements of the growing child. There is therefore suggestive evidence that members of large families are short of Calcium in spite of our calcarine environment. It is probable that those mothers who can afford tablets of medicinal Calcium do not need it, as they get enough of it from their foods and tap water; while members of large families with a low income, may have to go often without the more important Protein foods, if they are to get the medicinal Calcium which is prescribed to them. If expense has to be incurred, it may be wiser to insist on more cheese and other calcium-rich foods (even skimmed milk) and to supplement further with tap water, than to prescribe Calcium to anaemic, underfed individuals in poverty. Socially put, the question arises: Should we supply free medicinal Calcium to the large families of the poor or would it be advisable to fortify the bread with Calcium, as it is done elsewhere?

Iron supplies offer a still greater problem. The normal adult male does not need more than a trace of Iron intake; but the female must compensate for her monthly losses, and for her pregnancies, abortions, haemorrhages and lactations. Iron deficiency is widespread among women of the child-bearing age even in countries with a low birth-rate. It is the more so in Malta, where the birth-rate is high. Deficiency of Iron in the mother goes down as nutritional anaemia in the infant and this persists in the growing child unless the Iron deficiency is adequately corrected and the needs of Iron sufficiently maintained by suitable foods. It is obvious that Iron shortage is the big deficiency condition of Malta; and yet the administration of Iron is falling out of fashion! and free supplies to the poor are still few, often run short and the dosage is therapeutically too low. Worse still, the public has heard so much about Calcium and Vitamins that mothers buy Calcium and Vitamins on their own even when Iron is needed. Iron is objected to on the grounds that — it blackens or harms the teeth, or causes blood pressure to run high. Patent preparations are in widespread use. Some of these may contain Iron, but usually in too small dosage; others are but an alcoholic concoction with a catchy name, and not worth the bottle in which they are sold (and at what high prices!).

Mistaken notions on food values aggravate the situation. There is a widespread belief that eggs are the panacea for underfeeding, anaemias, deficiencies, debilities and all that. Actually 1/8 of a rotolo of meat, or half a bottle of Pasteurised milk have a nutritive value in Calories, Proteins, Calcium and Iron which is about two or three times higher than that of an egg. The disadvantages of eggs in view of their usually high cost are obvious. Tinned milk is much poorer in Iron, as Cow's milk has only 1/7 the Iron content of Goat's or Sheep's milk, and less proteins too. A good food difficult to obtain, is liver; but the advantages of liver extracts by mouth or by injection are not proportionate to their cost, unless a few rare diseases are present. Nutritional anaemias can usually be treated only by Iron and a suitable diet; unnecessary preparations are wasteful and may even do harm where poverty exists, as the financial effort may lead to economy in other essential articles.

The aim of this article is to show that there is full scope for investigation in our local problems; that funds are being misdirected to obtain what already is available or can be otherwise easily obtained, whilst what is really required is being left out; that the public is in sore need of education in Dietetics, and that encouragement by those who are at the helm of financial affairs to enable an expert to carry out research on these lines may give fruitful results. It is to be hoped that medical students will not tread on the old beaten misleading tracks after they have qualified.

STUDENTS' INTERNATIONAL CLINICAL CONGRESS 1948.

The suggestion made in Prague in 1946 by the International Union of Students for the holding of a Student's International Clinical Congress has been worked out successfully by the British Medical Students' Association.

The B.M.S.A. was entrusted with the organisation of this first Congress, and the organising committee of the B.M.S.A. has been hard at work since 1946. Many difficulties were encountered but they were all surmounted. Help was forthcoming from the British Medical Association, the British Council, the Royal College of Physicians, the Royal College of Surgeons, the Teaching and Special Hospitals, the International Union of Students and from other sources. The Congress was made possible through the untiring efforts of a selected team of English medical students who dedicated much of their precious time to its organisation.

120 students and newly qualified doctors took part in this historical Congress, some 24 countries being represented. Students from Iceland and Africa, from Canada, North and South America and Burma, from Australia and French Indo-China and from many countries in Europe, gathered together at this Students' International Clinical Congress. The medical students of the Royal University of Malta were represented by Joseph A. Muscat and Salvino Muscat.

The Congress was officially opened on the evening of July 6th by Mr. Zachary Cope, Senior Honorary Surgeon of St. Mary's Hospital. Mr. Cope was deputising for Professor J. A. Ryle, Honorary President of the B.M.S.A., as Prof. Ryle was not able to attend owing to indisposition. Sessions were held in London, Oxford and Birmingham.

All the delegates were welcomed to Great Britain on behalf of His Majesty's Government by Mr. Aneurin Bevan while the "radio doctor" Dr. Charles Hill extended a cordial welcome on behalf of the B.M.A.

The London programme from July 6th to July 13th included ward rounds in the teaching hospitals as well as visits to the special hospitals. Groups of delegates were shown round the Royal Cancer Hospital, Queen Charlotte's Maternity Hospital, West London Hospital, Moorfield's Eye Hospital, the Hospital for Sick Children at Great Ormonde Street, the London Chest Hospital, the Spinal Cord Injuries Unit at Stoke Mandeville, the Plastic Surgery Unit at East Grinstead, and various other special hospitals. Lectures by various Professors on a wide range of subjects were held. Among the lecturers were Professors Himsworth, Pilcher, Nixon, and Dr. Purdon Martin. In the evenings the delegates had occasion to visit Pharmaceutical Firms or else enjoy themselves at Concerts, theatres, dances, or parties. Sightseeing was also on the programme and visits to the Houses of Parliament, the Royal College of Physicians, the Royal College of Surgeons, Hampton Court, Kew Gardens, Windsor and a river trip from Westminster to Greenwich were specially arranged.

On July 13th the whole Congress moved to Oxford. The delegates were accomodated in the buildings of Magdalen College where they gained an insight into British University life. Professor Ellis, the Regius Professor of Medicine, welcomed the delegates to Oxford. While at Oxford the foreign students made personal contacts with Sir Howard Florey, Professor Mc Intosh, Professor Chassar Moir, Professor Witts, Professor Sir Hugh Cairns, Dr. Trueta, Dr. Berenblum, Dr. Mc Farlane, Dr. Sinclair, and other famous Oxford teachers, all of whom lectured on widely varying aspects of medical research. The students also enjoyed the excursions to the surrounding green countryside. These included steamer trips, rowing and punting.

And while trying to punt, two delegates were surprised to find themselves in the water, holding firmly though hopelessly to the pole that had stubbornly stuck to the bottom of the river.

It was at Oxford that the Maltese medical students contacted two ex-members of the local branch of the B.M.S.A. namely the Rhodes Scholars Dr. Herbert Gilles and Dr. George Xuereb.

The remaining days of the Congress were spent in Birmingham. The Lord Mayor and Lady Mayoress greeted the students to the great industrial town on the evening of July 19th. A civic reception was held at the Council House, while the introductory address at Birmingham was made by Sir Leonard Parsons, Dean of the Faculty.

Work in Birmingham consisted of a study of industrial and social medicine. The delegates were invited to visit the medical departments of various large factories as well as the numerous hospitals and clinics in the city. The visit to the Accident Hospital was most interesting and the delegates were very fortunate to be shown around the place while medical service including rehabilitation was actually being carried out. The lectures in Birmingham were quite a novelty as various authorities on Social Medicine took the Chair. A first class account of the British Health Services under the National Health Act 1946 was given by Professor A. P. Thomson while a survey on "General Practitioner Services" was ably handled by Dr. Beauchamp. Even here the organisers managed to take the students around the City and a journey by coach to Stratford-on-Avon was also squeezed in the Birmingham programme. At Stratford-on-Avon the Shakespeare Memorial Theatre was visited where "The Winter's Tale" was being produced.

On the evening of July 22nd the Congress officially came to a close when all the delegates were guests at a dinner given by the University of Birmingham Medical Society. Throughout the whole period i.e. from July 6th to July 22nd groups of delegates debated on 1. Principles of Medical Training; 2. Facilities for Medical Training; 3. The work of the Medical Faculty Bureau, and on the 23rd July a plenary session was convened to vote for the many resolutions passed.

All the delegates were fully aware of the importance of this first Congress and expressed the hope that such international reunions between medical students be held regularly in the future. In order to make sure that this be carried out, the Medical Faculty Bureau has been entrusted with the primary function of convening another Students' International Clinical Congress in two years time probably in the U.S.A., and students from all over the world, irrespective of race, colour, religion or political belief will be invited to participate, thereby fostering a better understanding among the future doctors of the world.

If ever the human race is raised to its highest practical level intellectually, morally and physically, the science of medicine will perform that service.

DESCARTES.

Recent Advances in the Treatment of Blood Diseases.

By

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During the past few years there has been considerable research activity in the therapy of blood diseases and success has been recorded in many instances.

Polycythaemia rubra vera: Polycythaemia rubra vera has been satisfactorily treated with *radio-phosphorus* ($P.^{32}$). This is a radio-active isotope, with a half-life of 14.5 days, capable of emitting negative B-rays; it may be obtained by bombarding ordinary phosphorus by slow neutrons in cyclotron and is used in the form of disodium phosphate in isotonic glucose solution, being given intravenously in doses of 5-10 millicuries and repeated when the R.B.C. count rises to abnormally high figures again, usually at intervals of about three months, but remissions lasting as long as two years are on record. $P.^{32}$ is considered to be the best drug at present available against this condition.

Macrocytic anaemias: Since the discovery by Minot and Murphy in 1926 of the value of liver treatment by mouth in Pernicious Anaemia, and the subsequent elaboration of an extract suitable for parenteral therapy, as well as the introduction of oral treatment with desiccated hog's stomach, there has been no major advance in the therapy of macrocytic anaemias until quite recently.

In an attempt to increase the concentration of liver extract and to minimize the allergic side-effects, which occasionally develop in some patients, liver extracts were progressively more refined, until it was realised that the highly refined extracts were potent in true pernicious anaemia, but often valueless in other non-addisonian nutritional macrocytic anaemias (notably those occurring in tropical countries especially in association with defective diets, with pregnancy or Sprue); whilst satisfactory remissions, in these, could still be induced by feeding whole liver or injecting its crude extracts. It was thus obvious that whole liver contained at least two haemopoietic factors, one essential for the cure of pernicious anaemia (present also in very refined liver extracts), the other essential for the treatment of tropical and some other macrocytic anaemias (and found in the cruder forms of liver extracts but not in the very refined ones).

Recent work by Rickes et al. has led to the isolation of the active principle in liver extract, effective against pernicious anaemia; this is a red crystalline substance designated by the above workers "*Vitamin B12*"; it is identical with the Lactobacillus Lactis Dorner's essential growth-factor, known to be present in commercial liver extracts. It has been found to be clinically and haematologically active in pernicious anaemia in a single intramuscular injection of 3ug. (West).

The active principle effective against tropical macrocytic anaemia (Wills' factor) has not been finally isolated in the pure state; but it is expected that the discovery of the anti-P.A. factor would help in the disentangling of the other haemopoietic factors in liver.

Davidson in 1945 tried, with gratifying results, the haemopoietic activity of a papain digest of liver at PH 5.6 (*proteolised liver*) by mouth and found that a number of megaloblastic anaemias, previously refractory to treatment with adequate, potent, liver extract by injection, responded satisfactorily to this preparation. Professor Davidson believes that these results may be

explained either by a potentiation of the haemopoietic factors in the gastro-intestinal tract, or more probably, by the presence of haemopoietic factors (including Folic acid and factors of the B2 complex), normally destroyed in the chemical processes used in the manufacture of liver extracts for parenteral injection. Whatever the explanation the fact remains that refractory macrocytic anaemias, occurring in association with pregnancy, sprue or idiopathically, can often be cured by this method.

Folic Acid (Pteroyl-glutamic acid, vitamin B11, Lactobacillus casei factor), introduced by Spies in 1945, and synthesized by Waller in 1946, is effective in doses of 5-10 mgm. per day by mouth, against macrocytic anaemias with megaloblastic bone marrows, including Addisonian Pernicious Anaemia; but recent clinical experience shows that its use should be limited to non-addisonian macrocytic megaloblastic anaemias, as in pernicious anaemia it is very liable to precipitate Subacute Combined Degeneration of the spinal cord.

Folic Acid is not the active principle in liver extract responsible for the cure of pernicious anaemia, as was originally suspected; in fact the amount of it present in liver extract is too small for that to be true; this was recently proved by the isolation of Vitamin B12, which is about 7000 to 8000 times more active in that direction, and which is present in liver in amounts running parallel with its therapeutic activity in pernicious anaemia. The exact relationship of liver extract to folic acid has not been definitely established, though it has been suggested that liver extract (or Vitamin B12) restores normal pteroyl glutamic acid metabolism, possibly by freeing it from the conjugated form in which it normally occurs in foodstuffs; folic acid being ultimately responsible for the full maturation of the R.P.C. series brought about by liver extract.

Hypochromic anaemias: There has recently been found that the addition of small amounts of *Molybdenum* to Ferrous Sulphate (1/20gr. to 3grs.) markedly enhanced the assimilation and efficiency of iron therapy, so that the haemoglobin percentage was raised to normal in a shorter period and with approximately half the total amount of iron usually required; it is also claimed to lead to diminished incidence of gastro-intestinal side-effects.

A note of warning was recently sounded against the indiscriminate use of *blood transfusions*, especially in women before the menopause, without previous testing for Rh. incompatibility. Besides reactions known to be liable to occur in the pregnant, in the parous and in those being transfused a second time, there is also the danger of causing a permanent Rh.-immunization, of such a degree and permanency, as to be frequently the cause of haemolytic disease of the new born. This explains the recent finding that while 2 per cent of unselected mothers at an antenatal clinic had had a transfusion, 36 per cent of mothers of babies with haemolytic disease had been transfused.

The Leukaemias: No notable advance has recently been made in the treatment of the *acute* cases, but considerable symptomatic relief and prolongation of life can now often be brought about in the *chronic* cases.

Chronic Myeloid Leukaemia often responds strikingly, both clinically and haematologically, to *urethane* (Igm., t.d.s., in keratin-coated capsules, or parenterally in 50 per cent solution, until the W.B.C. count has been brought under check; subsequently reducing to a maintenance dose). Urethane is a nuclear poison, acting selectively on cells in rapid division. It is liable to cause somnolence, anorexia, nausea, and vomiting; but its advantages (efficiency, cheapness, availability, ease of administration, etc.) far outweigh its disadvantages.

Chronic lymphatic leukaemia also responds to urethane, but less constantly.

Radio-phosphorus (P^{32}) has also given good results in the treatment of Chronic Leukaemia, especially in the myeloid type; but it probably has no advantages over deep X-rays as a form of treatment, except for

those suffering unduly from radiation sickness.

The *Alkyl-amines or Nitrogen-Mustards* (Methyl-bis-(B-Chloro-ethyl) amine hydrochloride and tris-(B-Chloro-ethyl) amine hydrochloride) at a dosage of .1—.2 mgm. per Kg. of body weight, given intravenously for 3—6 successive or alternate days, have also proved capable of inducing remissions in Chronic Leukaemia especially in the myeloid type. They are chromosomal poisons, notably on cells undergoing rapid division. They have however proved more useful in promoting a remission, occasionally of several months' duration, in the terminal cachexia of Hodgkin's Disease. Side-effects to be expected are nausea and vomiting, 3 — 4 hrs after injection; and anorexia and headache during 3 — 6 days administration of the drug; leakage into the subcutaneous tissues is liable to result in a severe inflammatory reaction with vesication; agranulocytosis is rare, occurring in less than one per cent of treated cases.

Agranulocytosis: A notable advance was made in the treatment of this condition when it was realised that the essential part of the treatment, after stopping the toxic agent, was the prevention and treatment, with *penicillin* of the invariable infection which often killed the patient, thus tiding him over for a sufficient period to allow of the resumption of normal granulocytic maturation. *Pyridox* (Vitamin B6) and *Folic Acid* have each been claimed to restore the maturation of the myeloid series of cells earlier.

Purpura: Toxic purpura associated with arsenic or gold therapy has been successfully checked by the administration of *British anti-Lewisite* (B.A.L. or 2-3 dimercapto-propanol) therapy.

To the therapeutic armamentarium of thrombocytopoenic purpura, Allen and Jacobson have, in 1947, suggested the addition of intravenous *Protamine Sulphate* and of *Toludine Blue*, each of which, they found, had a dramatic effect on petechial formation: they believe that both these drugs act by diminishing physiological amounts of Heparin in the blood-stream, and in the case of the latter drug, possibly also by improving capillary permeability. These drugs are indicated as a temporary measure to control capillary haemorrhages and are not intended to take the place of fresh blood transfusions, or of splenectomy in the essential form. The value of the glycoside *Rutin* (obtained from the flowers of Buckwheat) in controlling the capillary fragility in Werlhoff's Disease is still "not proven", though there are definite claims for its use. None of the above drugs has yet passed the experimental stage.

Hypo-Prothrombinaemia: For the normal formation of prothrombin the healthy liver cell has to be adequately supplied with fat-soluble vitamin K. Apparently spontaneous or disproportionate traumatic ecchymoses, deeper haematomata, external or internal haemorrhages, referable to prothrombin deficiency from lack of Vitamin K., such as occur in a number of conditions (neonatal, obstructive jaundice, biliary fistula, steatorrhoea, ulcerative colitis, gastro-colic fistula, prolonged fevers, administration of toxic drugs e.g. salicylate, quinine, etc.) can be remedied by the administration of synthetic analogues of *Vitamin* K notably 2 — methyl 1—4 naphthoquinone. Neonatal haemorrhages can be prevented by the prophylactic administration of 10mgm per day to the mother during the last week of pregnancy. Where the bleeding is due to severe liver disease or causes other than K deficiency, Vitamin K. administration is useless.

Haemophilia: Haemophilia cannot so far be radically remedied, but as it notoriously affects males, though transmitted by healthy females, treatment with female sex hormones has empirically been tried and lately oestradiol implants have been favourably reported upon, by French workers, as preventing relapses. Haemophilic haemorrhage is best treated by the administration of fresh blood transfusions or of *Cohn's "Plasma-Fraction I"* found in the globulin fraction of plasma (freed from fibrinogen and

prothrombin). The accellerating effect of the latter on blood coagulation may last 48 hrs or more, but the effects seem to wear off with successive administration; haemostasis may also be brought about by the local application of a number of agents such as *Russel viper venom* (1/10000 solution), *Thrombin* concentrates from bovine plasma, with or without the use of *oxidised cellulose packs* each of which is capable of arresting haemorrhage in a few seconds.

Intravascular Clotting: In arterial (coronary, cerebral, retinal, limb, pulmonary, etc.) and venous (thrombophlebitis migrans, post-operative, retinal, portal, mesenteric, etc.) thromboses, anticoagulant therapy may prove useful in preventing the further spread of the thrombus thus allowing of its earlier reabsorption and canalization. Two drugs have been introduced for this purpose viz.: *Heparin* (or mucviton polysulphuric acid, prepared from mammalian liver or lung) and *Dicoumarol* (the anticoagulant principle in spoiled sweet-clover hay, now prepared synthetically), the former bringing about this effect immediately after injection, while with the latter, which is given by mouth, the anticoagulant effect is realized after a lag of 24 — 72 hours. Their use is not without hazard and both drugs are liable to cause spontaneous haemorrhages from delay in clotting, unless the prothrombin time is kept constantly under check; antidotes are respectively protamine sulphate and blood transfusion. Their use has, at least, made possible the recent advances in vascular and cardiac surgery, as well as the promising experiments of purification from urea and other metabolites of the circulating blood of patients suffering from renal failure, by permitting its dialysis through cellophane tubes, bathing in a suitably adjusted solution: "the artificial kidney".

To sum up, recent progress in the treatment of blood conditions and diseases has achieved, in most cases, striking remissions and relief from symptoms rather than effecting radical cures; but this notwithstanding, a definite step forward can be said to have been made in their rational treatment and new promising fields of investigation have been opened.

We acknowledge receipt of the following Journals; we apologise for any omissions:

"The British Medical Students' Journal".
"Melita Theologica".
"The Health Report of the Maltese Islands".
"British Medical Journal".

CEREBRAL VASCULAR ACCIDENTS

JOHN AZZOPARDI AND CHARLES XUEREB
Students in the Academical Course of Medicine and Surgery

This article does not aim at presenting any new material. Its purpose is to indicate the clinical findings in the chief varieties of Cerebral Vascular Accidents viz., haemorrhage, thrombosis, and embolism.

It is important to realise from the outset that cerebral thrombosis and cerebral haemorrhage are not as was previously thought almost antagonistic; that a differential diagnosis between the two conditions for the purpose of applying different forms of treatment is not absolutely essential. Cerebral thrombosis and haemorrhage are not mutually exclusive the reason being that the underlying pathological condition is the same, viz., a degenerative process in the vascular wall which gives rise indifferently to either condition. In practice it is found that in the same patient while thrombosis is the cause of the initial strokes, haemorrhage is the cause of the final and fatal one. Consequently cerebral haemorrhage is seen more often in the autopsy room whereas cerebral thrombosis is more commonly met with in the hospital wards.

Cases of cerebral accidents present certain clinical findings, depending on the site and extent of the lesion. When the Middle Cerebral Artery, the commonest site for these lesions, is affected, hemiplegia is the result. This is accompanied by flaccidity which is later replaced by muscular hypertonus as voluntary movements start returning. The return of movements is in the order of face — leg — arm. In both upper and lower limbs the movements of the proximal joints are the first to return. Hemiplegia may be associated with aphasia, and sometimes with hemianopia. Pontine apoplexies are characterised by a double hemiplegia and bilateral loss of sensibility; cerebellar apoplexies by incoordination and vomiting. Consciousness may or may not be lost. Conjugate deviation of the eyes is a feature common to all apoplexies. The pupils are often unequal and may be contracted or dilated widely. Respiration is hurried and laboured; the blood pressure tends to rise provided that the heart is able to cope with the need of a higher B.P. The pulse is full and rapid and the body temperature is usually slightly elevated. The urine may show traces of sugar in the first 24 hrs. after the accident. There may be a mild or moderate leucocytosis and a transient hyperglycaemia may occur.

CASE REPORT I.

C.C., Greengrocer, aged 42, was in hospital on the 13th June 1948 when he developed a partial hemiplegia on the right side.

HISTORY:— The patient was admitted to hospital on the 6th June with severe pain in epigastrium. Patient had vomited once. There was profuse sweating and some dyspnoea. There was rigidity over the upper half of the abdomen and slight enlargement of the liver. The pulse was 110/min. regular and full. The arterial walls were tortuous (Radial, Temporal, Retinal). The B.P. was 140/120. There was no displacement or enlargement of the heart, no murmurs, but the heart sounds were muffled. The possibility of a perforated gastric ulcer was excluded especially by the E. C. G. which showed the Pardee curve of a *recent* coronary thrombosis. In the course of a few days the B. P. fell to 95/70; after treatment the B. P. was restored to within normal limits. On the 13th June, i.e. seven days after the coronary thrombosis, the patient developed a cerebral accident. Prodromal symptoms were absent. The onset was sudden.

Physical Examination: Patient had facial paralysis on right side, complete paralysis of right upper limb, and slight paresis of right lower limb. There was also complete aphasia.

Consciousness was not lost, but respiration was hurried and stertorous. There was no vomiting and the temperature was 100°F. The B.P. was 80/65. By the 28th June the patient was able to pronounce a few consonants but no whole words; there were almost full movements of the lower limb, and slight movements at the right shoulder joint were now possible. On the 4th July the patient was able to pronounce words, and the return of movements in the upper limb had spread to the elbow.

This case of Cerebral Vascular Accident can be attributed to two causes:

I. A cerebral thrombosis occurring soon after the coronary infarction. This fits in with the generalised arteriosclerosis from which the patient was found to be suffering and also with the conditions under which the accident occurred — Physical and Mental Rest.

II. A cerebral embolus originating from an intraventricular thrombus following the infarction of the heart for which the patient was initially admitted to hospital.

The return of movements followed the typical pattern, with the upper limb recovering last, and the proximal joints recovering before the distal. On the other hand the B.P. readings differed from the classical case, in that the B.P. tends to rise provided the heart is capable of responding to the needs of an increased B.P. In this case the recent involvement of the myocardium was probably responsible for the failure of the heart to meet the emergency.

CASE REPORT II.

Mrs. V.P., aged 33, was admitted to hospital on the 15th July 1948 with hemiplegia on the left side.

HISTORY: The patient suffered from Rheumatic fever 16 years before the accident, followed by a second milder attack 8 years later. Patient complained for years of dyspnoea on exertion. There were no prodromal symptoms ushering in the cerebral accident; the onset was instantaneous, the patient falling to the ground; she did not lose consciousness completely, but was in a stuporous condition. The patient vomited and complained of frontal headache.

Physical Examination: There was complete paralysis on the left side. The reflexes were exaggerated on the affected side, but the plantar response was flexor. The pupils were unequal, the left being greater than the right; they reacted normally to accomodation and light. There were no sensory changes. The sphincters were normal. Pyschically the patient was clear and calm. The heart on auscultation presented a low pitched early diastolic and presystolic murmur at the apex, with accentuation of the pulmonary second sound. The pulse was 60/min. The B.P. 140/100. Respirations 24/min. The urine was turbid, with a specific gravity of 1020, acid in reaction and containing sugar.

By the 25th July the patient had partially recovered movements at the left shoulder and elbow joints; the return of movements in the lower limb was imperceptible. By the end of July wrist movements appeared, while the lower limb started to recover.

From the signs of onset and the history and from the absence of signs of arteriosclerosis, this case of cerebral accident was diagnosed as one of cerebral embolism. The commonest cause of such cases is a detached fragment from an auricular clot in cases of fibrillation. In this particular case there were no signs of fibrillation and the origin of the embolus was presumably from an auricular clot accompaning the mitral lesion.

An interesting point about this case is the course the embolus took passing from the arch of the Aorta into the Innominate and thence into the Right Common Carotid rather than taking the more usual path via the Left Carotid. This explains the absence of aphasia. The B.P. reading after the accident agreed with the usual findings, as did the transient appearance of glucose in the urine.

A case report of cerebral haemorrhage has not been included with the above because, as already stated, these cases usually die soon after onset,

The Heart in Hyperthyroidism

By

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Demonstrator in Medicine

Clinical Findings.

Cardiac disorders, which, for lack of better designation, are vaguely labelled as "Myocarditis", will very often be found to be nothing else but the main manifestation, sometimes the only manifestation, of a diseased thyroid, if the effect of hypersecretion of this gland on the circulatory system is kept in mind. In the case where the cardiac condition is accompanied by all the classical signs of hyperthyroidism, the real cause of the mischief is, of course, evident, but the difficulty arises where the thyroid enlargement is not at all conspicuous and where the usual signs and symptoms do not accompany the circulatory disturbances. The importance of diagnosing these cases in the early stages before the circulatory system is permanently involved, is too obvious to be stressed further. They are more prevalent in women than in men because of the predilection of Thyrotoxicosis for females, which is to be expected on account strain imposed on the thyroid gland during the critical periods of a woman's life, i.e. puberty, menstruation, pregnancy, and the menopause.

Although Graves, in 1835, was the first who gave the most detailed description of Hyperthyroidism, and later in 1840, von Basedow discovered that exopthalmos formed part of the whole picture, yet as far back as 1802, Flajani had already associated goitre with tachycardia. The type and severity of the cardiac condition depends on the degree of Hyperthyroidism, but, because at all stages of this disease the sympathetic, and to a less extent, the parasympathetic nervous system are always involved, all cases at all stages present a rapid pulse rate, a high pulse pressure and an increased activity of the heart. The *Pulse* is persistently rapid even at rest, ranging from 100 to 120 beats per minute; exercise and excitement cause a further acceleration which is more marked and takes a longer time to recuperate than in the normal subject. It is easily compressible and is not sustained, but of the 'collapsing' type — as in aortic regurgitation — with an abrupt full stroke. Its rhythm is generally regular, but irregularity of the pulse-rate, because of either extrasystoles or auricular fibrillation, is by no means a rare occurrence; it is stated that fibrillation of the auricle, either paroxysmal or continuous, is present in about one-fourth to one-third of all cases that come under treatment. Extrasystoles are not of serious consequence; when auricular fibrillation is present, however, its ultimate prognosis depends on whether it is the *only* cardiac disorder, or a consequence of an already damaged heart. When present in the first stages of hyperthyroidism, auricular fibrillation is usually of a temporary nature, and if it does not disappear spontaneously, it is sure to do so with the treatment of the Thyrotoxicosis, and, there is no necessity to treat it specifically i.e. with quinidine. If this cardiac irregularity, however, appears in the later stages, and is the result of damage to the conducting system of the heart, it is permanent, and may respond only to quinidine therapy. In rare instances fibrillation is replaced by flutter or by paroxismal tachycardia.

The *Pulse-pressure* is always high. At first — in the 'pre-Graves' stage — the systolic pressure is still within normal limits, but the diastolic is low, since the peripheral arteries are poorly filled owing to the flaxidity and lack of tone of these blood-vessels. In the later stages, the systolic pressure rises,

the average rise being about 150mm. of mercury; as with the pulse-rate, it is raised further with excitement, both physical and mental, much more than in the normal subject, and takes a longer time to return to its previous level. Accessory factors, such as the menopause and kidney disease, help to raise the blood-pressure higher still; in the first instance, however, its influence as to prognosis is not to be taken too seriously.

The *Heart* contracts excessively and works with a lively action, consequently the heart sounds are abrupt and accentuated, and the impulse at the apex is diffuse. Systolic murmurs may be heard at any of the cardiac foci and are very often audible over two seperate foci at the same time. They are, however, mostly heard over the pulmonary area, propagated along the blood-vessel, and over the second or third left interspace; when the heart is over-acting a cardio-respiratory murmur is usually audible in the left axilla. Sometimes a pre-systolic 'bruit', simulating that of mitral stenosis, is heard over the mitral area, but its inconstancy and the absence of an accentuated second sound in the pulmonary area serve to differentiate it from that of the rheumatic condition. All these murmurs are soft and blowing in character, are not accompanied by a thrill and are inconstant in their appearance. At first they are purely functional and will disappear entirely when the heart and circulation are brought under control as the thyrotoxic state improves with treatment.

In untreated cases of hyperthyroidism, where the tachycardia has persisted for some time, hypertrophy of the cardiac muscle is bound to result; X-rays examination then reveals a spherical or more commonly a triangular enlargement which involves mainly the left ventricle. In more severe cases, the cardiac hypertrophy is followed by dilatation of both ventricles and auricles, which is sometimes of great extent, the condition then resembling, to all intents and purposes, ordinary advanced myocardial degeneration; if irregularity of the pulse-rate (extrasystoles or auricular fibrillation) supervenes, the picture is one of full-blown 'Thyrotoxic myocarditis' — the heart muscle has probably suffered irreparable damage, and the state of affairs is irreversible and serious indeed. If congestive failure is not already present, it is certain to occur within a very short time, because the high rate of beating of the heart and the increased blood-output against a systemic blood-pressure which is usually much above normal, will drain the energy expenditure of the heart to its limit. It has been pointed out by Lewis that in such cases enlargement of the liver is a much more reliable sign of an over-loaded venous system than engorgement of the cervical veins, for the simple reason that the increased vascularity of the Thyroid gland in Thyrotoxicosis will tend, by itself to overfill these veins as a whole.

Because of the tachycardia, the *Electro-cardiographic* tracing shows a shortened P-R interval. Irregularity of the heart rate will show either as extra-systoles or if due to auricular fibrillation the 'f' waves, typical of this condition make their appearance; very rarely the 'flutter' wave replaces that of fibrillation. Whenever the functional efficiency of the heart is impaired, there is, even in mild cases, very high P and T waves and a low R; in more severe cases, the P and T waves are lower than normal, and there is definite evidence of myocardial degeneration, i.e. delayed conduction time or slight displacement of the R-T segment.

Post-mortem findings: In the average case there is moderate hypertrophy of the heart, which is more in evidence in the left ventricle. If auricular fibrillation was present, the auricles are found to be dilated; when the immediate cause of death was congestive failure, dilatation of the whole heart was observed. Brown pigmentation of the heart muscle is usually present, and histological examination reveals areas of degeneration and of lymphocytic infiltration, and diffuse small fibrous scars. Myocardial infarction, due to emboli, is sometimes present.

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