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The Chest-Piece

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(Malta Branch)

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EDITORIAL

THE first day of October, saw yet another group of duly qualified Medical Students going out into the world from the Alma Mater which had brought them up during the last seven years. They feel they are not badly equipped for a start in their chosen career. Many will find themselves on the staffs of the local hospitals enriching their experience from the material at their disposal, under the guidance of their Senior Medical Officers. Many others, for whom no employment can be found at the local hospitals, will have a tough job at making themselves useful and known as general practitioners. Others who feel that the day of the general practitioner is passed, will find themselves wending their way to the great universities beyond our shores to return to us again, as experienced, learned specialists. To them all, whoever they may be, and whatever part of Medicine they intend taking up, we offer our congratulations. To them all we wish the very best of luck for their coming years of fruitful maturity. May they ever keep high the aims and ideals of the profession into which they are launched, and may they drink to their satisfaction of the fount of practical knowledge in the many, may we hope, useful and fruitful years which lie before them.

* * *

The results of of the final examinations of the Academical Course of Medicine and Surgery of our University, have shown that something must be wrong with our system of training. It may be that there are too many subjects in the final examinations, and that subjects, which it would be better to study earlier in the final course, take up time and energy in the final year, which were better devoted to clinical practice. Now another batch of students commence their final course. Conditions are still very much the same as they were for the newly graduated doctors three years ago. There has been talk of many needed reforms in the Statute of the Faculty of Medicine, but so far nothing tangible has resulted.

* * *

The Rhodes Scholar for 1949 was J. Galea B.Sc., M.D., very well known for his athletic abilities in the track and at tennis. He is now at University College, Oxford, where he intends studying Physiology. To him, happy studying in Oxford.

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Charles Xuereb, the first Editor of this Journal, has also just left the University and is now fully armed with his M.D. degree and warrant. He is a keen, vigorous young man of 25, full of initiative, without whose perseverance and assidious work, this Journal would never have made its appearance. He started his higher schooling at the Lyceum, from where he matriculated in 1941 going to the University and gaining his B.Sc. in 1945. To him our thanks for having started this medical journal, and our best wishes for higher attainments to which we are sure his perseverance and initiative will lead him.

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"The Chest-Piece" is a student journal. It is published by students, for students. So far there has been an enormous inbalance in the number of contributions submitted by members of the Faculty and by students, as is clearly shown in this number.

"The Chest-Piece" gladly welcomes any contribution "by those amongst us who have not expelled the Muse from their midst."

THE REPAIR OF WOUNDS

Prof. P. P. DEBONO M.D., D.P.H., F.R.C.S.

Soon after an injury, involving damage to or loss of tissue, is inflicted, reaction sets in which may be considered as preliminary to repair.

The repair of wounds and injuries may therefore be said to take place in two stages. The first stage, or stage of reaction, has for its object the cleaning up of the wound and the removal of all the dead and damaged tissue resulting from the injury. The second stage, or stage of repair proper, has for its object the reconstruction of the organism, and as far as it is possible the 'restitutio ad integrum'.

Reaction is essentially a vascular phenomenon, and it occurs only in vascular tissues. The circulation in the capillaries immediately adjacent to the site of injury is slowed down and then stopped, plasma escapes into the interstitial tissue and leucocytes move out through the wall and proceed towards the injured parts. Thus two zones are formed, the zone of *stasis* in which the circulation is stopped, which immediately adjoins the area of necrosis, and which in the human being is irreversible, and the zone of *prestasis*, where the movement of blood in the capillaries is slowed down and which is reversible.

Outside the zones of stasis and prestasis there is a third zone of variable depth, the zone of *inflammatory hyperaemia* where the arterioles and capillaries are dilated and the current of blood is accelerated. The inflammatory hyperaemia ensures a free blood supply to the reacting tissues.

The fixed tissue cells in the area immediately adjoining the damaged part react by returning to the embryonic state and beginning to profilerate. They give rise to *fibroblasts* which acquire the property of forming collagen, and to large cells called *histiocytes*, which are endowed with phagocytic powers and which play an important part in the disintegration and removal of dead tissue elements.

The origin of the fibroblasts is not definitely established. Available evidence points to their being derived from the fixed tissue cells which, under the influence of some substance or *evocator* formed locally, return to the embryonic state and re-acquire the property of forming collagen fibres. Whether all the fixed tissue cells are capable of being thus activated, or whether this property is confined to a certain number of cells which lie dormant in the tissues until they are awakened as the result of injury, is not yet settled.

The capillary endothelium proliferates and forms buds. These become canalised and transformed into new capillary loops, which advance towards the injury or loss of substance carrying with them fibroblasts and histiocytes. This tissue consisting mainly of newly formed capillary loops, fibroblasts, histiocytes, covered by a layer of leucocytes is called *granulation tissue.*

Granulation tissue.

The granulation tissue grows into and replaces the damaged and mucosed part or fills up the gap left by any loss of substance.

Granulation tissue undergoes further changes. The fibroblasts soon begin to lay down collagen fibres as a felted mass. The young fibrous tissue contracts and in doing so approximates the edges of the gap, and closes the cavity. The blood vessels are compressed and they gradually disappear. The result is an almost avascular scar.

The Time Factor.

In a simple uncomplicated wound, the process of mopping up dead tissue cells and debris usually occupies about three days. On

the fourth day granulation tissue is well formed and fibroblasts can be made out in considerable numbers, and the healing wound begins to show some resistance to disruption. The period during which the healing wound can easily be pulled apart is referred to as the *lag period*. After this lag period, which is normally of about four days duration, the tensile strength of the wound increases rapidly up to the tenth day, when the rate slows down until healing is complete.

Factors which Influence Healing.

If the force required to disrupt a healing wound is plotted against the time measured in days or hours, an S-shaped curve is obtained.

An adequate blood supply is essential for the processes of repair. Without it, repair is slowed down in all its stages and even stopped altogether.

During the growing period the processes of repair are accelerated, the lag period is reduced by as much as one day, whilst the rise in tensile strength occurs at a more rapid rate. In old age the reverse takes place and the processes are slowed down.

Other factors which prolong the lag period and slow down the repair processes are :

(a) General ill-health.

(b) Deficient protein reserves.

(c) Deficiency of ascorbic acid.

(a) General ill-health requires no comment.

(b) Deficiency of protein reserves is a condition, which though obvious, has only been given its due importance in recent times. It is noticed that, during the healing of wounds the N-balance in the urine becomes negative, indicating that more proteins are being broken down than are being assimilated. It appears as if the body, in order to obtain the materials for repair, rapidly breaks down protein using up only a small moiety, and eliminating the rest. It appears further that the processes of regeneration have a priority over the maintenance needs of the body. Thus the Salamander will reform its tail, even if starved of food, by utilising its own body tissues; in this way also may be explained the rapid wasting in cases of extensive wounds. Further in Malta, during the seige, the healing of wounds occured normally even though the diet was very near the indispensable minimum. The extra protein is obtained by using up the protein reserves. If these are not available, or when these are exhausted, life becomes impossible.

(c) Ascorbic acid is necessary for the formation of collagen fibres. Its deficiency makes the tensile strength of the healing wound rise at a slower rate, or not at all.

Mechanical Factors which Influence Repair.

Sufficient rest is essential for the process of repair to proceed normally. Nature secures the necessary rest and immobilisation, by providing the pain mechanism, with its attendant inhibition of movements, by providing reflex muscular contracture, which immobilises the part, and even in some instances by providing temporary means of retention such as callus in the case of fractures.

Art has improved on the efforts of nature in this respect and immobilisation by suitable means such as dressings, splints or plaster, is regarded as indispensable in the treatment of injuries. It is recognised that if the parts are not kept sufficiently at rest, repeated injuries interrupt the orderly processes of repair by producing small haemorrhages or foci of necrosis which make the healing process go back to its starting point.

Infection.

The presence of infection delays the processes of repair. Infection causes further necrosis of tissue which sometimes outstrips repair. When this happens the wound enlarges instead of healing. When infection causes as much destruction as the natural processes of repair are just able to cope with, the wound remains in 'statu quo'.

Scar Tissue.

Healing processes as described, occur in vascular mesenchymal tissues.

In areolar tissue the defect is bridged over by scar tissue, a tissue consisting of a felted mass of collagen fibres which has the property of contracting and strangling its own blood supply. Scar tissue, therefore, is almost avascular, and thus has very limited powers of reaction or regeneration which may be summed up in the statement that scar tissue has no healing powers; when subjected to injury it breaks down and disintegrates.

During operative procedures, scar tissue is removed as far as possible, so that the margins of the operative defect consist of healthy vascular structures. On the other hand, its property of disintegrating when subjected to injury such as stretching, is made use of in dilating fibrous structures by stretching with appropriate instruments. Its property of contracting appears to be inhibited as soon as the young scar tissue is covered with epithelium. For this reason it has become the practice to provide a covering of epithelium to raw granulating surfaces, as early as possible, by means of skin grafting. In this way the formation of excessive scar tissue is prevented and deformities resulting from its contraction are avoided.

Repair in Special Tissues.

In some tissues, notably in aponeuroses, tendons and bone, repair goes a step further. Not only are the ends of the defect joined together, but the original tissue is actually reconstructed.

In membranes covered with endothelium, there is a strong tendency for the scar to be subsequently removed and for the original structure to be regenerated. It is well known that adhesions in the abdomen tend to disappear. The dura mater, in a comparatively short time, is able to regenerate both the fibrous and the endothelial layer lining the subdural space.

In tendons, the gap is bridged at first by granulation tissue, but soon the fibroblasts and histiocytes show a tendency to arrange themselves parallel to the lines of tension, and collagen fibres are laid down along these lines, parallel to one another. In this way the original structure of the tendon is reproduced. In such a process the cells of the paratenon and those lining the tendon sheath play an important part in supplying the fibroblasts and the histiocytes.

In bone, the processes of repair are still more complicated. When a fracture occurs, the gap between the fragments is filled up with blood which constitutes the haematoma. The haematoma surrounds both ends of the broken bone and the sides are bounded by the soft tissues of the part. The first stage of repair consists in the formation of granulation tissue, which advances into and replaces the haematoma. Some of the activated mesenchymal cells, which accompany the newly formed capillaries, have the property of producing ossein, an organic substance capable of becoming permeated by lime salts. As soon as the inflammatory hyperaemia, which has led to the decalcification of the ends of the bone, begins to subside, this matrix becomes infiltrated with lime salts and spicules of bone are formed, which pervade the organising granulation tissue and give it increased consistence. This is the *temporary callus*.

The temporary callus surrounds the ends of the bone and bridges the gap between the fragments. Its object is the immobilisation of the fracture in order to allow definitive repair to take place.

The repair process, however, does not stop here, since the cells derived from the osteoblastic tissue of bone and periosteum have the power not only of laying down bony matrix, but also of demolishing and removing it. After the temporary callus which has an irregular structure is formed, the osteoblasts along lines of stress are stimulated to arrange themselves regularly according to a definite pattern and to lay down bone according to the regular architecture of the bone in that situation; the osteoblasts

in the region outside the lines of stress, take on osteolytic properties and demolish the redundant osteoid tissue. In this manner the callus is gradually reconstructed and the original structure of the bone reproduced. The excess of callus which, now that the bone has united serves no further purpose, is removed.

Practical Applications.

(1) The knowledge of the rate of increase in tensile strength regulates the time for removing sutures.

As a rule the normal skin is sufficiently healed in 7 to 10 days to allow sutures to be removed; but in patients suffering from diseases of the digestive tract, from Carcinoma, from inanition or old standing disease, when the protein reserves are presumed to be at a low ebb, the sutures are left in for at least 14 days.

In the face and neck where the blood supply of Vitamin C and also other vitamins earlier e.g. on the 5th or 6th day.

(2) Before undertaking serious operations the blood proteins are estimated and if found deficient are brought up to standard by suitable means. In urgent cases blood transfusion proves to be highly effective. The same applies to the amount of haemoglobin in the circulating blood.

(3) After serious operations the patient is given high protein diet, and if his digestive system is unable to cope with it, blood or plasma transfusion is indicated.

(4) For the same reasons an adequate supply is very free sutures may be removed should be maintained.

(5) The importance of immobilisation for promoting rapid repair has been known for a long time, but it is continually being rediscovered and is now an integral part in the treatment of the soft tissues.

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 benefit it, exercises his art with caution, and pays equal attention to the rich and poor.

VOLTAIRE.

FOURTH INTERNATIONAL CONGRESS OF CATHOLIC DOCTORS

Rome was the venue of the Fourth International Congress of Catholic Doctors. It was fitting that in the year of His Holiness' Sacerdotal Jubilee, representatives of all the Catholic doctors in the world, meet in the Eternal City to discuss the problems of the Human Person in the light of medical science. The Maltese medical profession was represented by Prof. W. Ganado B.Sc., M.D., M.R.C.P., B.Sc. (Lond.), Dr V. Tabone M.D., D.O. (Oxon.), D.O.M.S. (Lond.), F.R.C.S. (Edin.), and Dr. A. Tabone, Medical Supt. Victoria Hospital Gozo. Prof. Ganado and Dr. A. Tabone were accompanied by their wives who took part in the Congress as 'aggregate members'.

Congress was inaugurated at the Capitol on Saturday, 24th September. Cardinal Pizzardo presided and speeches of welcome were delivered by the Mayor of Rome, the Italian Minister of Health Gonnella, Prof. A. Gedda, President of the Congress and others. The following morning, Mass was said at San Marco by Cardinal Pizzardo, who in a short homily expounded the duties of the Catholic doctor, not merely as a healer of the body, but also as a comforter of the troubled spirits of patients. On the same morning, the exhibition "Christendom in the History of Medicine" was opened at Palazzo Venezia — this famous palace, headquarters of the Congress, being beflagged with the colours of all the nations which had sent representatives on this occasion. The first report of the Congress on "The Animation of the Foetus" by Prof. Niedermeyer of Vienna, was delivered that morning. The old standing controversy between the theory of simultaneous animation and successive animation was lucidly presented, and the view put forward that the former seems to correspond better with the facts of Biology. The problem bears more than an academic interest in that, if the theory of successive animation were to be held, some might argue that it would not be homicide to procure abortion before the infusion of the 'anima rationalis'. Prof. Niedermeyer was however, emphatic on the point that even in such a case, abortion was still to be considered at least as 'homicidium attentatum or anticipatum', as the foetus was an 'homo in potentia'. There could be no doubt that from the moral point of view, abortion was a mortal sin at whatever period it was carried out. Dr. Foley of Ireland and Dr. Torrioli of Italy spoke on the same subject.

A very topical subject, "Pre-matrimonial Eugenics", was introduced by Prof. Porto of the University of Coimbra. He stressed that the existence of nations depended on the strength and vigour of their people, and to improve the health, well-being and chances of happiness of children, was a praise-worthy aim. The purpose of eugenics is to beget physically perfect children who are also endowed with a sound mind. The medical profession can do much, by giving sound advice to prospective partners, to enhance the health of a nation. A careful history of the contracting parties will allow one to decide on the chances of a healthy offspring, and to give the required advice. It should be made clear that doctors can only give advice, and that they should not resort to coercive measures, as the dignity of the human person must be safeguarded, and as the prohibition of contracting marriage would only lead to more extra-marital relations, without reducing the chances of unhealthy offspring. Prof. Porto reviewed the many defects and diseases which could make marriage unwise, and pointed out that sterilisation of the unfit was not to be entertained. Even if such a step were to be followed it would not materially diminish the transmission of certain defects, as even apparently normal persons with recessive defects could transmit them, and no one would dare advise sterilisation of apparently normal individuals. Dr. Castillo de Lucas spoke on the same subject stressing that chastity is the

basis of pre-matrimonial eugenics, and that the pre-matrimonial certificate must be voluntary and its use dictated by Christian medical conscience. The great interest which the subject raised was reflected in the unusually large number of persons from all over the world who took part in the ensuing discussion.

In the afternoon of the 26th, there was an interesting discussion organised by the Centre de Deontologie et des Recherches Medicals de Pax Romana. Prof. Portes spoke on the Code of Medical Deontology and its moral action and limits. Dr. Oberlin and Father Larere, both of France, contributed to the discussion emphasising the need for submission in such matters, to the authority of the Church. The following day, Prof. Palmieri of the University of Naples gave a stimulating talk on Narco-analysis from the moral, medical, social and ethical points of view. Narco-analysis can be considered as a special form of psycho-analysis, which through a twilight condition determined pharmacologically, takes advantage of the removal of inhibitions of the personality, and of the absence of moral censure to look inside the internal world of the patient. Clinical applications of this procedure can be valuable in diagnosis and treatment. In forensic medicine it could be used for psychiatric valuations, for distinguishing the organic from the functional, or for obtaining a confession. From the legal point of view, the speaker maintained, narco-analysis was not lawful because the accused was thereby placed in a condition of lowered awareness, and that even if his consent were previously obtained, such confessions as he might make under narco-analysis could not be produced against him. There was an added objection, in that the medical expert could not carry out investigations as to the culpability of the accused. That was the sphere of action of the judge, and the medical expert could not ask direct questions of the accused except in the presence of the judge. Even the judge could not interrogate an accused under narco-analysis, because laws — in most, if not all civilised countries — say that verbal interrogation must be made when the subject is able to understand, to express his own will and to defend himself. Every man has the right to defend himself and no guarantee of truth can be attached to statements made under narcosis.

Prof. Joseph Prink spoke on the Moral Aspects of Pre-frontal Leucotomy. He analysed the results of this surgical operation and stated that there is usually a degeneration of the personality with marked diminution of the emotional life of the patients. In considering whether such an intervention is lawful or otherwise, one must consider the actual state of the mental condition of the patient, and if this is permanently deteriorated and there is no hope of improvement by other means, leucotomy may be considered justifiable. It is a matter of profit and loss, and the former must be proportional or superior to the latter. He did not consider it lawful to perform leucotomy on patients who were in great pain for incurable conditions, unless the superior mental faculties of such patients were at the same time diminished permanently.

On the 29th, Dr. Jesus Bacala' of Manila, gave a detailed and comprehensive exposition of the problem of Artificial Insemination. He made a critical study of the question and described the methods used and the percentage of successful attempts claimed by various investigators. He raised the many medico-legal problems involved and then went on to consider the moral, ethical and religious aspects of the problem. There could be no doubt that artificial insemination outside marriage was to be condemned, and that children so begotten were illegitimate. The procedure in wedlock could be considered only when no acts against nature were committed in the process, and when no third parties took part in the act of procreation, which is a function belonging entirely to husband and wife. The speaker asked whether the production of semen by aspiration or testicular puncture could be considered as against nature. It was claimed that

on this point moralists were divided as some maintained that the absence of erotic pleasure ruled out pollution.

The last report was on the Rights and Limits of Social Medicine. Prof. Grenet of Paris stated that social medicine protects the collectivity and guarantees the care of individuals for the sake of social conservation. Social medicine must respect the dignity of the human person and his rights and liberties. It should be in everyone's power to choose one's doctor both for the curative and preventive side of medicine. There should be respect of the rights of the family, and it should not be lawful to 'impose' the separation of children from parents on the grounds that they are living in an unhealthy environment. There should be respect of the human person in the hospital and the attendance of relatives should not be prevented. There should be liberty of action for the hospital Chaplain, who should be able to administer Sacraments quickly. In combating veneral diseases the speaker condemns brothels, claiming that they have not justified their existence and that they wound human dignity deeply. Sterilisation of the unfit is to be condemned outright, and Catholic doctors cannot take part in its performance. Pre-marital certificate should not be transformed into an authorisation or prohibition for contracting marriage. As was to be expected, the whole problem of social medicine was hotly debated, and the delicate and difficult position of Catholic doctors in non-Catholic countries was emphasised.

The social side of the Congress was no less attractive and important. Contacts made in such meetings are as valuable as the reports obtained therefrom. Most of the congressists were accompanied by their wives and arrangements were made for them to visit Villa d'Este at Tivoli and the Vatican Museums during the official sitting of the Congress.

The first tourist trip around Rome included visits to Santo Spirito Hospital (with which, it was discovered, our own Santo Spirito Hospital at Rabat has some connection), the Foro Italico, the Pincio, the Pontifical Gregorian University and the Cappella Sistina. On the second tour, the Istituto Superiore d'Igiene, the Basilica of San Paolo outside the walls of Rome and the Casa dei Cavalieri di Rodi were visited.

The audience at Castel Gandolfo was the culminating point of the programme. The Pope, received with loud cheers and prolonged clapping, talked on the duties of Catholic doctors and dwelt on the moral aspects of artificial insemination. The Sovereign Pontiff made it clear that this procedure could only be allowed when performed to help nature, after the normal act of intercourse had been accomplished between husband and wife. After this authoritative pronouncement, His Holiness spoke with representatives of each delegation, but soon the crowd of doctors and their families surged forward around him in an effort to kiss his hand.

After a visit to the Isle of Capri, a reception was held at Castel Angioino where Congress ended its sittings. Prof. Gedda explained that the findings of the Congress would be submitted to the Holy See for approval before becoming the official resolutions of the Fourth International Congress. He proposed an order of the day saying that "considering that in many countries National Health Schemes offended or did not take into sufficient consideration the dignity of the human person, all doctors were urged to carry out in their respective countries propaganda among the masses to enlighten them about the rights and limits of any State Health Scheme".

The final act of the Congress was the official banquet at the Hotel Transatlantico in Santa Lucia. Thus ended a memorable Congress which should be fruitful not only to those taking part, but also to those whom these represented.

CATHOLIC MEDICAL MORALS AND CULTURE AT THE FOURTH INTERNATIONAL CONGRESS OF CATHOLIC DOCTORS

By
W. GANADO B.Sc., M.D., M.R.C.P., B.Sc. (Lond.)
Professor of Physiology and Biochemistry

A Congress of Catholic Doctors is not meant to reveal new discoveries in Medicine; indeed it deals with subjects which, more often than not, have been fully debated beforehand. No wide differences of opinion are usual; all the members profess the same Code of Morality and no disagreement on principles occurs. It is therefore not surprising that the six hundred Catholic doctors who, in September, converged to Rome from thirty different countries reached unanimous conclusions.

The subject matter of the debates is dealt with elsewhere in this number. It may however be useful to recall some conclusions.

It was the unanimous opinion that the Prematrimonial Certificate should be encouraged. It, however, cannot be made as an authorisation or as an impediment to marriage, but must be free, personal and confidential.

The much debated problem of Nationalisation of Medical Services had been considered at Lisbon in 1947. The following were laid down as a minimum of requirements:

1. Respect for the fundamental rights of the human person.
2. Absolute respect for the professional secret.
3. Freedom in the choice of one's own doctor within the limits of possibility and the exigencies of the general welfare.
4. Recognition by and protection from, the State of the family doctor.
5. Respect for the doctor's person and assurance of a standard-of-living corresponding to his social status.

Emphasis was again made on the necessity for respect of the rights of the human person, for freedom of choice of one's own doctor, as well as freedom for the doctor to decide what treatment he considers suitable.

On Artificial Insemination the seal was set at Castelgandolfo where His Holiness the Pope defined the practice as illegitimate and unnatural. The doctor's intervention can only be allowed between a married couple as an accessory factor after a natural act.

Concurrently with the meetings at Palazzo Venezia, other functions were organised. An exhibition on "Medicine in Christianity" was inaugurated in the Royal Hall of this Palace. A carefully picked collection of originals, or of faithful reproductions, from Christian Archaeology and Mediaeval Art, such as can easily be put together only at Rome, showed the interest of the Church in Medicine, ever since the times of Christ (also called Iatros). The early Christian doctors, the mediaeval social workers, the several Orders of Knight Hospitallers, of Nursing Sisters, of medical helpers were represented. The skull of St. Luke was exposed at St. Peter's and Mass was said in the Church of Saints Cosmas and Damian in the nearby forum.

The aim of the exhibition was to show that the early Christians undertook the healing of the body with an outlook different from that of the classical pagan healers. The old methods of treatment were often kept; thus the archaeological evidence

presented, showed that the drinking of medicinal waters at the wells of Aesculapius was persisted in, but a new meaning was given to it; the importance of the Soul was driven home, as evidenced from the Christian symbols which now decorated the cups in use.

Christian Medicine benefited greatly from the influence of Christian Charity. When the Dark Ages supervened, the love of Culture and the charity of the monks, transmitted to us medical theories, traditions and practices which would otherwise have been lost.

Monastic Medicine seems to have flourished separately in the East and in the West. San Basilio, Bishop of Cesarea, organised many hospitals in the East which are still called after him (Basiliades); whilst San Benedetto included in his "Regola" a whole chapter on the treatment of patients. In the West, Monastic Medicine culminated in the Medical School of Salerno, from which many schools on the Continent and in the United Kingdom had their origin.

Both Cassino and Salerno were visited by the congressists. The bombed Abbey of Montecassino is now a ghost of its previous splendour and glory. The little that has been done in its reconstruction has been carried out by the monks themselves. It would be unfortunate if this unique centre of Christian and European civilisation were to be left in its present state, even though no reconstruction can restore the beauty which was once Cassino.

Salerno received the Congress with enthusiasm. The Archbishop, in person, guided the members around the remains of the old Medical School which had made the town famous.

At the Hospital of Santo Spirito in Rome, the Congress was equally well received. This hospital, founded by Pope Innocent III, has seen the work of Montpellier, Filippo Neri and the Knights of the Holy Sepulchre. It has been for several centuries the leading hospital of Christianity and still stands as a symbol of the Church's early social work. One of its many branches, still open to patients, is the hospital at Rabat, Malta, bearing the same name, about which there exists considerable unedited literature in the library of the parent hospital in Rome.

The connection of the Knight Hospitallers of the Order of St. John of Jerusalem with Medicine, need not be commented on here in Malta, where they founded our Medical School. The Grand Master of the Order was the Honorary President of the Congress and gave a reception at the mediaeval palace of the Order at Piazza del Grillo, where from the "Loggia" overlooking Via dell'Impero, one recalled the old traditions of the Order, and felt sharply the continuity of the Catholic Church through the centuries. Beneath stood monuments recording four thousand years of history, through half of which the Church has surmounted obstacles and has given what is best in Culture, Arts and Civilisation. Nor is this process at an end. The Church's contribution to civilisation was inherent in the fact that thirty countries were represented at the Congress; it was emphasised by a film show on the work of Catholic Missionary Nursing and Medical Organisations in Africa; it was crowned by a reception given at the Università Gregoriana, where a polyphonic concert was given under the able direction of Don Lorenzo Perosi.

The appeal of Catholic culture, even if only just met with, is — in a broad and all-embracing sense — inescapable to the educated mind. I have always felt that our University will lack a real Catholic spirit until it forms a post-graduate Association of Catholic Culture. My colleagues at the Congress, had the same feeling that our presence at the Congress was morally inferior to that of other members, as unlike them, we were not representative of any Catholic post-graduate association. No such association exists in Malta among doctors, nor amongst other professions.

THE ROMANCE OF VISION

By
V. TABONE M.D., D.O. (Oxon.), D.O.M.S. (Lond.), F.R.C.S. (Edin.),

Sight, in a general sense, may be taken to mean sensitivity to light, while in a more restricted but more proper sense, it means the conscious appreciation of a sensation obtained through the eyes. Sight is therefore the response to light. In our school days we were thought that light was a form of energy and that there was an unbridgeable difference between energy and matter; we now know that the two are really different manifestations of the same thing; both are composed of electrons and protons, the different proportions of each, their affinities and their relative movement, determining the nature of the substance, whether it be light, sound or a piece of stone. We know that light has mass, volume and weight.

In the vegetable kingdom, no true vision is present, but various forms of light sensitivity are encountered. The response is usually in the form of movement towards or away from the source of light. We all remember how the sun-flower turns towards the sun, following it across the horizon, and bending woefully on its stem during the hours of darkness. Heliotropism is the simplest form of light sensitivity among living objects and is the result of chemical reactions in the cells of plants produced by light.

The simplest form of animal life, the amoeba, reacts to light by going towards or away from it; the kind of movement is constant for any given species. Up to this stage of development in life, the response to light is of the whole body; no discrimination as to the nature or direction of light is possible. For these it is necessary to have specialised organs of sight. Thus the earthworm has a number of light-sensitive cells scattered over its body. When it is wholly underground no light is perceived, but when partially above ground, only part of its light-sensitive cells are stimulated and this will give it an indication as to where the light is coming from, and possibly also to its intensity. Similarly some marine animals have patches of light-sensitive cells spread out on the flat, and they can thus perceive light, its direction and if a definite shadow falls across their surface, also the shape of an object. Furthermore, by the successive stimulation of neighbouring cells these animals may become aware of the movements of objects.

Such types of animals so far described, can have no clear image of the world outside, as they lack a focussing mechanism; for this, a lens (or a lens system) is necessary in higher animals endowed with a specific organ of sight, and in these we notice it for the first time. An eye consists essentially of a condensing mechanism, an aperture and a sensitive layer or retina. The lens or system of lenses should possess a mechanism by which rays from different distances could be focussed on the sensitive layer. Different animals have different ways of focussing rays. In some, the lens can be moved backwards and forwards in much the same way as is done in a photographic camera. Moving the lens forwards would increase, while moving it backwards would decrease its refracting power. In higher animals and in man, change in refractivity is brought about by changes in the shape of the lens, which remains in the same position. Changes of shape are possible because the lens is enclosed in an elastic capsule, and because of the presence of the ciliary muscle. This process of changing focus is called accommodation, and in virtue of it, objects at different distances from the eye can produce a clear image on the retina. In man, with the advance of years, the lens becomes less

plastic, so that it does not readily change its shape by the action of the ciliary muscle; as a result there is increased difficulty of focussing near objects without the aid of an additional lens. This condition is called presbyopia, and it should be emphasized that it is not a disease, but a manifestation of ageing.

The 'aperture' of the eye is represented by the iris, a coloured diaphragm controlling the amount of light entering the eye and contributing to the sharpness of images. The pupil is round in man, but may be of other shape in animals; we are all aware of the slit-like pupil of the cat. In some animals devoid of a lens, a slit-like pupil permits of the 'focussing' of rays on the retina from different distances; it does this by allowing only a small pencil of rays to get through, and these need not be refracted to get to the retina; in other words the clearness of an image is at the expense of its luminous intensity. The colour of each iris varies from one individual to another and often from one eye to the other; the various patterns are chiefly due to the different distribution of pigment. It is well known that all white babies are born with blue irides, due to lack of pigment; this colour is due to the passage of light through the stroma of the iris. Many a young mother will show disappointment at the changing of the colour of the eyes of her offspring from a beautiful shade of blue, to one of the shades of brown.

The sensitive layer in the living camera is the retina and it is composed of specialised cells which are variously affected by light. The receptive cells are of two kinds, the rods and the cones. The former are the more sensitive to light and to movement, while the latter are responsible for clear vision and for the perception of colour. Some animals have only one type of cell, others have both, but in different proportions. Nocturnal animals require greater awareness of the slightest amount of light, and their retina tends to have exclusively or preponderantly rods. On the other hand, diurnal animals need greater acuity of vision for feeding, hunting or defence purposes and they also require colour perception. Thus, examination of an animal's retina will tell us much of its habits. Man has compromised in this respect. His retina has both rods and cones, the former greatly outnumbering the latter. The cones enable him to perceive colour and to notice the minute details of things, but for their proper functioning a minimum amount of light is necessary. This explains why at dusk we cannot read or tell the colour of an object. By means of the rods, which are more numerous in the periphery of the retina, we can go about in comparative darkness, and we can also become aware of objects at the periphery of our field of vision, and so receive the stimulus to look directly at such of them as interest us. The macula of the retina is composed almost exclusively of cones and this explains why objects are seen best when we look at them; it also explains why on a starlit night a faint star disappears when we look at it, only to re-appear when we look to its side. In this case, the star emits enough light to stimulate our rods but not our cones.

On the retina, images should be able to follow in quick succession, and the chemical reaction in the retinal cells induced by light should be of a reversible character. In the rods visual purple is found, which is bleached by light and which is regenerated in the dark. Although no pigment has as yet been found in the cones, it is likely that some form of it is also present and that a chemical reaction so far unknown takes place in them by the action of light.

The perception of colours is a very interesting but elusive phenomenon. Colours themselves are not the property of this or that object, but are a personal appreciation of the individual or animal. It is well known that white light can be split into its seven constituent colours, but the number of hues present in the spectrum is in the region of 164. It is more than likely that some animals, notably birds perceive a far greater number of colours than we humans do, and to them

the world would be luxuriously bright and colourful! We have all met colour-blind people who cannot perceive certain bands of the spectrum. The condition is usually congenital and there is no cure for it. Such people see things of a different hue than we do, but often pass unnoticed because they learn to call different shades of the same colour by the names traditionally attached to a particular colour. We all know that the famous English chemist Dalton was colour-blind and that to him strawberries were a close match to the leaves of a tree. Animals which have no cones are naturally colour-blind, but from this it does not follow that all those with cones perceive the same colours as we do. In fact, among mammals there is evidence of colour perception only for apes, monkeys and men. The great number of theories for colour vision testify to our ignorance in the matter. The most recent and the most plausible one has been put forward by Granit, who has found that different fibrils of the optic nerve react to different colours.

We have all noticed that on looking at any given object, we see all its details but at the same time we are also aware of many other things around the fixed object. That portion of space which one can see at any given moment constitutes one's field of vision. In man and in animals with forward-directed eyes, the field of vision of one eye overlaps that of the opposite side in the centre. This is of importance in the proper appreciation of solidity and of the relative position of objects, which is called stereoscopic vision. Because of the distance between the two eyes, each eye looks at an object from a slightly different angle; the two impressions thus obtained give one the basis on which to build a composite but single mental impression of the two. The high development of the human macula and the great degree of accuracy of detail seen by it, may lead some to belittle the value of the peripheral field. Nothing could be more erroneous. A person with perfect central vision but with restricted peripheral vision, as in a case of advanced Retinitis Pigmentosa, is worse off than one with depressed central and good peripheral vision. Humans and animals with forwardly-directed eyes, gain in stereoscopic vision what they lose in the extent of the field. The presence of a blind area behind in such animals is readily admitted. We cannot tell what is happening behind our backs both in the figurative and the literal sense! Birds and animals with laterally-directed eyes have little or no stereoscopic vision, but they have a large field of vision. Most of them have no blind area at all and they can see all round them at any given time — panoramic vision. This explains why it is so difficult to surprise such animals or to catch them unawares.

We have only considered so far the type of vision possible with a given eye or a given organ of sight. No sight, however, is possible without an adequate brain. One should not imagine that the human eye is the most perfect specimen of its kind. The bird for one, has a much better eye, with better acuity and a larger field; we have only to recollect how birds can see very small worms from great heights. Besides, the human eye has a fair amount of chromatic, spherical and other aberrations and a philosopher once exclaimed that he would have disdained to accept an offer of such an imperfect optical instrument! What then makes the human eye such a wonderful instrument of sight? It is the brain which gives man his pre-eminence in the world and which makes human treasure of the signals which the eye sends. Without the brain we would see without knowing that we are seeing, which is absurd.

The phenomenon of vision is chiefly a mental one, but requires the service of an adequate organ of sight. The two images focussed on the retina, reach the brain via the optic pathways; here they are received, fused, and elaborated into a new mental impression. By means of the numerous association fibres an object seen evokes many associations, and by

reference to previous experience it obtains its meaning. It is this fact which explains why the same object will mean differently to different persons. A portrait by Raffaelo, will evoke in the mind of the art lover the purest form of pleasure, while the same picture to an art dealer will only mean so much money! The emergent sensation which an object produces depends on previous experience and training and is a feature of one's personality. Again a very good brain will put up with more defects of vision than a one which is less good. On this fact depend the many claims of correction of poor vision without glasses; patients are trained to understand the meaning of a blurred image and to integrate mentally defective portions of an image.

It is very fascinating to speculate as to how light affects the retinal elements and as to how the impulses thus started are carried to the brain and there interpreted. The process is still shrouded in much mystery, but a modern development of science may help us to understand how such a process could happen. The discovery of the photo-electric cell has made television possible. This cell has the property of transmitting current through it in proportion to the amount of light which falls on it. By increasing the number of photo-electric cells in the transmitting and receiving apparata, it has been possible to increase the clearness and definition of images sent. In animals, the retinal elements would act as the receiving photo-electric cells, while the optic pathways would carry the impulses thus set up to the brain where the messages are again unravelled and presented to consciousness. The psychical component of vision is not yet fully understood and offers good scope to the intelligent research worker.

To conclude, the story of vision is one of grades, starting at the lowest level with phototropism as exhibited in plants, passing through the appreciation of light, the appreciation of the direction of light, the appreciation of movement, of form, of colour and of perspective, to end at the highest level of human vision, in which objects seen have a meaning and have the power to evoke ideas and to stimulate action.

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 (not necessarily for publication), and should be addressed to:

The Editor of "The Chest-Piece"
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Effects of War on the Mental Health of Civilians

By

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It is a common belief that the upheaval of war is responsible for a greater incidence of psychiatric illnesses among civilians than are bound to occur in peacetime. Such factors as fear, worry about the fate of relatives and sudden bereavements, are thought to act as precipitants of mental illness. It is understandable, therefore, that at the outbreak of war (1939) it was envisaged that a certain proportion of civilian casualties would be of a psychiatric nature.

In a letter to the *Lancet* some years ago (3rd February 1945), I made a few preliminary observations on the psychological reactions of the civilian population to war conditions during the siege of Malta in World War II. I laid stress upon the diminished rate of admissions of psychotics to the mental hospital during the war years. I, however, refrained from commenting on this occurrence as I considered it premature to reach any conclusions before I could undertake a careful study of the experiences of other psychiatrists. It is now thought that enough time has elapsed to justify an attempt to study this seemingly paradoxical phenomenon and to offer tentative explanations for its occurrence.

STATISTICAL CONSIDERATIONS.

It appears that the first physician to study the influence of war on the mental health of civilians was Dr. L. Lunier who carried out an exhaustive investigation on this subject in France following the end of the Franco-Prussian war (1). While he came to the conclusion that the events of 1870-71 had caused the occurrence of 1700 to 1800 cases of insanity (roughly 16% of all admissions), he discovered that between the 1st July, 1870 and the 31st December, 1871, French asylums received 1300 patients less than in the corresponding period of 1869-70. The number of insane under care which should have been, in ordinary circumstances, 40,056 on the 1st January, 1872 was only 37,451 — a difference of 2,605. During the height of the Commune in Paris, there were fewer insane people than there had been for years (2). Lunier concluded that the immediate results of the events of 1870-71 had been to diminish considerably the number of admissions to mental hospitals and consequently the total number of patients under care at the end of the year. From the end of 1871, the total number of admissions tended to resume its gradual increase and after reaching an exceptional level in 1872, it again went down, in 1873, to the usual average; so that the events of 1870-71 moderated temporarily, but did not cause an arrest in the progressive increase of the number of patients admitted to hospital.

Lunier expressed the opinion that "the excitement of war, the rousing influence it exerted on many minds was to some extent a set-off against its baneful effects on the mind", and that "the war acted as a powerful diversion to avert the outbreaks of insanity" in persons predisposed to mental disorder (3).

Legrand de Saulle is quoted as saying that the war of 1870 proved that "the gravest political events, although they may give at the moment a colour to the particular form of insanity, do not produce, as is commonly supposed, an increase in the number of lunatics"(4).

Passing to World War I, we find a similar diminution in the United Kingdom in the number of cases of mental disorder among civilians. Dr. J. Keay stated in October, 1918 that "the official records of the Board of Control and the reports of asylums show that during the present conflict, which has now lasted four years, the number of cases of insanity occuring in this country has diminished"(5). In fact, a total decrease of 23,763 in the number of notified insane was registered between 1914 and 1918, instead of an increase of 32,767 as would have been expected to occur under ordinary conditions(6).

Dr. J. V. Auglin, in an address delivered in June, 1918 to the American Medico-Psychological Association, said that there "was no evidence, in Great Britain at least. that since the outbreak of war the amount of insanity has increased. There has actually been a decrease in hospital admissions."(7)

During World War II, the Minister for Health, Mr. Ernest Brown, declared on the 29th October, 1943, that the stress of war in the United Kingdom had not led to any increase in the incidence of the more serious mental disorders and that war stresses in themselves did not increase the incidence of the psychoses (8).

Dr. J. S. I. Skottowe, who made a statistical study of the mental health of the population of Buckinghamshire during the war years; Sir Laurence Brock, chairman of the Board of Control, and other workers came independently to the same conclusion (9).

According to its report for 1943, the Board of Control found no evidence that the war had brought about any increase in serious cases of mental breakdown. Even in the severely bombed areas there were relatively few cases in which mental illness could be attributed with certainty to the effects of war and especially of air-raids. In cases where mental breakdown appears to have been precipitated by air-raids, features in the patient's history suggested that mental trouble would have developed in any event, though possibly at a later date. "Looking at the situation as a whole", the Board declared, "we feel that it may fairly be claimed that the war has demonstrated the mental stability of the nation"(10).

Dr. F. Hopkins, who investigated the incidence of mental disorder in Liverpool during the first three years of the war, recorded a decrease in the number of admissions to mental hospitals during this period and concluded that, there was a decrease in the incidence of mental disorder (11).

Subsequent war years confirmed the findings of previous years, so that in 1945 it was established with certainty that there had been no increase in the incidence of the psychoses (12).

The incidence of neuroses among civilians was also surprisingly low — lower than in the Forces and, perhaps, little greater than in peacetime (13). This incidence was not attributed directly to the effects of war but to the fact that many persons, who previously led a sheltered life, found themselves forced into industry often in unfamiliar and trying conditions (14).

Guy's Hospital, which is situated in the middle of one of the most frequently bombed areas of London, recorded very few cases of neuroses attributable to war conditions. Dr. R. D. Gillespie, who was the physician for psychological medicine at this hospital, was struck by the relative rarity of mental disturbances among civilians exposed to air-raids. The Sutton Emergency Hospital, which served another severely bombed sector of London, received only forty-one civilian neurotic air-raid casualties in two years (2nd September, 1939 to 31st August, 1941). (15).

Dr. F. Hopkins, basing himself on the Liverpool material, concluded that there was little or no increase of neuroses even among populations that were subjected to the heaviest enemy action (16).

INCIDENCE IN MALTA.

At the outbreak of World War II, it was expected that psychiatric casualties in Malta would be high (17), and beds for cases of war neuroses and psychoses were pre-

pared in special wards at the Hospital for Mental Diseases in 1939 (18). These expectations, however, were not fulfilled. The Medical Superintendent of the mental hospital, Prof. V. Vassallo, stated in 1940: "In Malta, air-raids and the conditions resulting from same, such as mass evacuations and the resulting over-crowding in certain areas, constant apprehension and fear of impending danger, violent deaths of relatives etc., did not react unfavourably on the mental health of the population. Panic and hysteria, mass and individual, were markedly absent...Only certain psychopathic individuals, so easily prone to mental disorder, reacted unfavourably" (19).

The number of admissions in 1939 was 169, and in 1940 it was 178. An analysis of the case material admitted to hospital in 1940 revealed that only 18 cases (10 males and 8 females) out of a total of 178 admissions, showed a history of having been affected by air-raids and other war conditions. Of this number, 9 had already suffered from a previous mental illness, while in 7 other cases such factors as heredity, involutional period, influenza and avitaminosis had contributed to the onset of the illness. In only the remaining 2 cases could war-time conditions be blamed as causative factors. The form of mental disorder shown by these cases was: Manic Depressive Psychoses 7, Involutional Melancholia 5, Anxiety States 3, Confusional States 2, and Hysteria 1 (20).

Admissions fell to 167 in 1941. There were 17 cases in which war conditions were adduced as contributory factors in the causation of their illness, but in all these cases other predisposing or exciting factors, or a history of previous attacks of mental illness were also present. In 3 of them avitaminosis played a part. These cases were diagnosed as: Manic Depressive Psychoses 6, Involutional Melancholia 5, Confusional States 4, Scizophrenia 2 (21).

A still more marked decrease in the number of admissions occured in 1942, when only 138 patients were admitted to hospital. It must be remembered that 1942, the third year of the war, was the worst period of the siege yet in spite of the continuous and intensive air-attacks, admissions were the lowest in thirty years, while cases "directly attributable to war conditions were again practically absent" (22).

The number of admissions in 1943 was 147. It is significant that as the war situation became easier in Malta in 1944, there was a rise in the number of admissions during subsequent years. Thus, the number of admissions was 232 in 1944, and 250 in 1945, which was the highest figure recorded in the history of the hospital. This increase was attributed partly to a higher incidence of mental disorder and partly to increased use of the hospital by patients (23). In the following years, the admission rate returned to the expected level in proportion to the natural increase of the population of these Islands.

EXPLANATORY THEORIES.

Various views regarding the causes of this decreased incidence of mental disorder among civilians during war-time have been advanced. Lunier attributed the diminution in the number of admissions to French hospitals in 1870 to (a) the disorganization of the psychiatric services during the war, (b) the parsimony of some departmental administrations, and (c) the suspension of certain aetiological influences which cause mental disorder in peacetime (24).

In a review of the Fourth and Fifth Annual Reports of the Board of Control for 1917-18, it was stated that the decreased admission rate to mental hospitals in England during World War I did not indicate that fewer people became insane during the war. It was suggested that, apart from the beneficial effects of less unemployment and higher wages and of diminished consumption of alcohol, the decrease in the number of admissions was due to the fact that, owing to the moral and social dissolution resulting from war conditions, the people became less sensitive to abnormalities and vagaries of conduct, and thus certification

was resorted to on fewer occasions than in peacetime (25). Another observer stated that "many who had nothing to do previous to the war have forgotten self by throwing their energies into active work for others. Rich and poor alike are now busy all the time. The result is a vast improvement in the nation's mental stability. People whose lives were empty are interested from morning till night. Work is the surest consolation for the grievous sorrow of war" (26).

Mr. Ernest Brown, Minister for Health in 1943, attributed the decrease in the incidence of serious mental disorder in World War II, to the improvement in employment (27). Apart from this increased opportunity of employment, Dr. F. Hopkins attributed the decrease in insanity to the strengthening of the community spirit and to a lessening of mental isolation which, according to him, favours the development of psychological abnormalities (28).

Such factors as better standards of nutrition and the provision of a real aim in life were also held responsible for the diminution in the number of cases of mental disorder during the war (29).

E. Glover attributed the low incidence of mental disorder in World War II to the fact that (a) a number of cases of mental illness remained unobserved and unrecorded, (b) many psychosomatic reactions were treated for "organic" illness, (c) only a very small proportion of the population in any raided area experienced severe traumatic conditions (30).

In Malta it was held that "sudden preoccupation about realities proved beneficial in those cases where preoccupation upon purely neurotic complaints was rife" (31).

DISCUSSION.

Explanations that seek to account for the diminished extent of mental illness in wartime by ascribing it to lack of facilities for the detection and treatment of psychiatric disorders cannot be taken seriously. The mental health services of belligerent countries were well organised during the two world wars, and any cases that needed psychiatric treatment could not have escaped observation. Disorganisation of mental health services, which according to Lunier may have accounted in part for the decrease in mental illness in France during the 1870-71 conflict, cannot therefore be considered as a factor responsible for the diminished rate of admissions to mental hospitals during the last two world wars. Apart from a more efficient organisation of psychiatric services, the knowledge of mental disorder has made a notable advance since Lunier's time, so that the chances of a mental illness remaining undetected have also become considerably less.

The contention that the lower incidence of mental disorder during wartime is only apparent and that it is due to increased tolerance of abnormal behaviour on the part of the population, has nothing to support it. The disruption of families, destruction of homes, loss of relatives, the impossibility of looking after mental patients at home in severely bombed areas, and the added burden of obtaining the necessary nourishment for them in time of scarcity, rather tends to bring about an increased intolerance of mental patients than the opposite effect. Under such conditions far from an eschewing of the mental hospital, there is a tendency to make a greater use of institutional treatment, as relatives, who previously nursed the sick members of their families at home, could no longer do so under war conditions.

E. Glover's explanation that a number of psychiatric casualties went unobserved or were misdiagnosed as organic cases is quite possible. But as the same thing had been happening (as it still does) in peacetime, the group of mental cases that may have escaped the psychiatrist's attention or may have masqueraded under an organic diagnosis, is cancelled by the equally numerous group that suffers the same fate in peacetime.

The other theories fall roughly into two groups: (a) those that attribute the decrease in mental illness to the influence of material conditions such as full employment,

higher wages, and better standards of nutrition, and (b) those that are based on psychological factors such as the discovery of a purpose in life where previously there was none, increased sociability, and the concentration of attention on real dangers rather than on subjective sources of anxiety.

It cannot be denied that such factors have contributed to the diminished incidence of mental disorder, but it seems to me that a very important cause has been overlooked — that is, the emotional opportunities provided by the war for the working off of aggressive urges, both masochistic and sadistic, to which we are all subject and which, when suppressed, as is bound to happen in peacetime, may give rise in certain individuals to various forms of mental abnormalities.

A little introspection will easily make us aware that we possess destructive and aggressive tendencies. These aspects of the personality have been receiving attention from psychologists and psychiatrists ever since Freud and others pointed out the important part that aggressive feelings play in determining our behaviour. It is now recognised that aggression is a fundamental component of the structure of our personality. It first manifests itself in infancy and gradually unfolds itself as we grow up. Parallel with this development, however, there is also a process of suppression and repression which results from the imposition upon us of the social and moral standards of the community. Consequently, as we grow older, our outward behaviour tends to assume a dignified and refined pattern, though our aggressive urges and the stimuli that call them forth become stronger in proportion to the intensification of personal and social frustrations. From this clash between our aggressive feelings and the claims of the community, there results a sense of guilt which in its turn gives rise to a certain amount of anxiety. The majority of us succeed in controlling our aggressiveness, more or less satisfactorily, in accordance with the requirements of society. Our aggressive urges are not, however, extinguished thereby. As social life becomes more complex and "civilised", the pressure on the individual to forgo the satisfacion of his desires is increased, with the result that he has to endure more frustration than in the past. The greater the frustration to be endured, the stronger our aggressiveness becomes and therefore the more pressing are the personal and social needs to devise ways and means of keeping it within bounds. A state of tension is thus set up. The majority of us manage to maintain equilibrium by giving vent to our destructive tendencies in a harmless and guiltless way and thus succeed in diminishing our anxieties. But some of us are not able to avail themselves of the opportunities that peacetime offers for the elimination of aggressive urges.

In these individuals, therefore, the tension arising from unsatisfied destructive urges accumulates until it breaks through in the form of mental disorder. In this type of individual the war acted as a cathartic and thus served to avert a mental breakdown. It appears, however, that the emotional cathartic effect of war only occurs when civilians feel that the enemy is really near and dangerous. When such is not the case, our personal aggressive urges are not brought into play with the result that no release of tension occurs. Thus in World War I, when Maltese civilians did not experience a direct contact with the enemy, the rate of admissions to the mental hospital did not undergo any change in its natural increment. From the emotional standpoint, the enemy was too far away to be formidable and to stimulate the aggressive tendencies of civilians, with the consequence, that masochistic and sadistic tendencies were not projected on to the enemy, but remained attached to one's own personality which they continued to harass as in peacetime.

On the other hand, the front line conditions to which civilians in Malta were exposed during World War II, afforded those with repressed aggression and anxiety a direct outlet for their destructiveness which

had been denied them in peacetime. The war provided them with a legitimate object (a near and powerful enemy) on which to vent their hatred and their sadistic desires, which previously were held in check by the ethical standards of the community. Added to this opportunity, there was also the very important fact that their tension was relieved in a socially approved way, for in war the group not only accepted the manifestation of hatred but expected them to do so, as a sign of loyalty to the group. In these individuals, therefore, the war served as a means of satisfying suppressed destructiveness and hate, and the elimination of guilt and anxiety thus effected, had the beneficial result of preventing the occurrence of mental disorder, which might have otherwise manifested itself under peacetime conditions.

If this interpretation is true, it puts us in a position in which we can understand, and perhaps remedy, many of the disruptive forces that tend to wreck our social structure today. It is evident that such an understanding into the psychology of our aggressive urges assumes at the present time an urgency which it has never had before.

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One Year of Clinical Pathology

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"There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune".

Mine was indeed a very low tide, when one year ago, through no fault of mine, I found myself in charge of the Clinical Laboratory at St Luke's Hospital. To be sure, it was at that time only a small room with a table, eight or nine reagent bottles, and some test-tubes. There was too, a very modern electric centrifuge, apparently without ball-bearings as the children in an adjacent ward mistook its noise for that of a jet-propelled aeroplane. Since then the small room has grown into a glorified ward laboratory.

A pathologist is a hero — since I am not a pathologist, I am no hero — but I suppose I deserve to be mentioned in despatch for during these twelve months I have been criticised, threatened and occasionally manhandled by clinicians on the sad occasions when laboratory findings did not fit in with the clinical diagnosis.

When I was asked to contribute a paper I decided to look over the laboratory tests carried out since January this year and to write down my impressions, in the hope that they might be of some use to medical students. A clinical laboratory requires much equipment, but the most essential are method and distilled water. My impressions are :

1. Blood Counts and other Blood Tests.

Leucopenia is commoner in Undulant than in Typhoid Fever — presumably because of the frequency of Bronchitis in the latter. In Undulant Fever the white cell count varied from 4,200 to 6,000. In uncomplicated Typhoid, however, the count is lower, sometimes as low as 2,000. Lymphocytosis is about equal in the two diseases.

The haemoglobin percentage is lower in Undulant than in Typhoid Fever — probably due to the chronic nature of the former malady.

In Typhus the white cell count is rarely below 7,500 and lymphocytosis is not at all a distinctive feature. Malignant Undulant shows very low white counts — 2,000 in one particular case with Undulant Hepatitis and delirium.

In all cases of marked anaemia, a study of a blood smear is essential. The stains in use are Leishmann, Wright, and Giemsa. All give very good results, but Giemsa is my favourite.

Platelet counts have a wide range of error. One case of thrombocytopenic purpura had a platelet count of 5,000 and a bleeding time of 15 minutes.

There are three tests which require method and precision. The first is the Prothrombin Time Estimation. Always use controls and express the result as per cent of the normal. The lowest figure I obtained was 50% of normal in a case of thrombosis of the left lower limb under treatment with Heparin and Dicoumarol. The second is the Fragility Test. The third is the Reticulocyte Count — my highest count was 38% in a case of pernicious anaemia under treatment.

2. Examination of Faeces.

In testing for occult blood always use new test-tubes. Several tests are available, but the Benzidine Test gives best results.

Examining for Entamoeba histolytica is a challenge — time and experience are necessary for its isolation.

3. Test-Meals.

These are very useful in the diagnosis of Macrocytic Anaemia and newgrowth of the stomach. Otherwise they are of little use. The Histamine-Alcohol test-meal is preferable, because of its cleanliness and reliability.

4. Cerebro-Spinal Fluid.

This is a very important chapter in clinical pathology. In short, the following are important: appearance, protein content, sugar content, cell count and differential count. In clear fluids the Tryptophane Test is helpful.

In Tuberculous Meningitis the differential cell count in infants and in adults is different. In the former, polymorphonuclear cells predominate, whereas, in the latter, the lymphocyte is the distinctive cell. Sugar is always diminished; even after treatment with Streptomycin, it rarely returns to normal. The Tryptophane Test was performed 14 times, 8 times on C.S.F. from tuberculous meningitis, 6 times on normal C.F.S. It was positive in the tuberculous fluid, and negative on normal fluid. This test is reliable, provided the fluid is neither turbid nor xanthocromic.

In streptomycin-treated tuberculous meningitis, during the first month the streptomycin is given intrathecally and the C.S.F. shows a steady improvement. In one case, however, treatment had to be discontinued owing to violent reaction to streptomycin — there was a rise of protein and cell content in the spinal fluid. All relapsed cases showed a high protein content (as high as 250 mgm. %) and a relatively low cell count, say 30 lymphocytes, — evidence of block. The question whether the block is caused by an arachnoiditis brought about by the irritant action of streptomycin, or whether it is due to the tuberculous process itself, cannot be answered with certainty.

5. Liver Function Tests in Cases of Jaundice.

The classification of jaundice proposed by Ducci is both practical and scientific; he distinguishes between medical and surgical jaundice. Medical Jaundice includes the prehepatic (haemolytic), and the hepatic, which may be due to infective, toxic, and obstructive causes. Surgical Jaundice is called post-hepatic and includes jaundice caused by newgrowth of the head of the pancreas, gall stones etc. Important information is obtained from the history and physical diagnosis.

The haemolytic varieties of jaundice may be recognised by appropriate study of the blood and of the products of breakdown of haemoglobin. There is no evidence of serious hepatic dysfunction. The post-hepatic varieties show signs and symptoms of interference with biliary flow. There seldom is evidence of seriously disturbed hepatic function unless the jaundice is of long duration. In hepatic jaundice there is, as a rule, no evidence of long-continued interference with the flow of bile into the intestine, and in contrast with the afore-mentioned types, there is early and conclusive evidence of disturbance of metabolic functions of the liver. The large number of liver function tests testify to their inadequacy to provide a foolproof answer. Most liver function tests by themselves do not make a diagnosis, but, at best, point to certain abnormalaties such as the presence of liver insufficiency, the clinical significance of which is largely a matter of interpretation to the physician (Dyke, Recent Advances in Clinical Pathology, Churchill).

Isolated laboratory findings in the differential diagnosis of jaundice are of little use and are usually inconclusive without clinical data. The best method is to carry out the simple tests, serially repeated; of these the most valuable are serial qualitative urobilinogen estimations in the urine and the faeces, and the thymol turbidity test.

The available tests of liver function cover a wide range of functional activity, but unfortunately each test is highly specific for a given function. In addition, in pathological

conditions of the liver all functions of the liver are not impaired to the same extent; therefore it is possible through improper selection of the test to obtain normal findings in an organ that is actually considerably damaged. Thus it is advisable to use a group of well selected tests, rather than a single one.

Finally the clinical laboratory is not a slot-machine, but rather an aid to the clinician who should interpret the pathologist's result in the light of clinical findings.

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

"The British Medical Students' Journal."
"Melita Theologicc".
"Law Journal".
"British Medical Journal".
"The Practitioner".

ARTIFICIAL INSEMINATION

A Pronouncement by Pope Pius XII

Pope Pius XII, addressing delegates to the Fourth International Convention of Catholic Doctors, at Castelgandolfo, on September 29th, said in the course of his address:-

"Natural and Christian morality maintains everywhere its imprescriptible rights, and it is from these, and not from any considerations of feelings or of materialistic and naturalistic philanthropy, that the essential principles of medical decontology [the science of duty or moral obligation] are derived: such as the dignity of the human body, the preeminence of the soul over the body, the brotherhood of all men, the sovereign domain of God over life and destiny.

"We have already had many occasions to speak on a good number of special points regarding medical morality, but now We have here a question of the first order, which with no less urgency than other questions requires the light of Catholic doctrine: it is the question of artificial insemination.

"We could not allow this opportunity to pass without indicating briefly a general outline of the moral judgment regarding this subject.

"(1) The practice of artificial insemination, when it is applied to man, cannot be considered exclusively, nor even principally, from a biological and medical viewpoint, while leaving aside the viewpoint of morality and law.

"(2) Artificial insemination outside marriage is to be condemned purely and simply as immoral. In fact, the natural law and positive Divine Law are such that the procreation of a new life may only be the fruit of marriage. Marriage alone safeguards the dignity of husband and wife—and in the present case, particularly that of the wife—and their personal well-being. Marriage alone provides for the good and for the education of the child.

"Consequently, there is no possibility of any divergence of opinion among Catholics regarding the condemnation of artificial insemination outside marriage. A child conceived in such conditions is, by this fact alone, illegitimate.

"(3) Artificial insemination in marriage, with the use of an active element from a third person, is equally immoral, and as such to be rejected summarily. Only marriage partners have mutual rights over their bodies for the procreation of a new life, and these rights are exclusive, non-transferable and inalienable. So it must be out of consideration for the child.

"By virtue of this same bond, nature imposes on whoever gives life to a small creature, the task of its preservation and education. Between marriage partners, however, and a child that is the fruit of the active element furnished by a third person—even though the husband consents—there is no bond of origin, no moral or juridical bond of conjugal procreation.

"(4) With regard to the lawfulness of artificial insemination in marriage, it is sufficient for Us at present to recall the principles of the natural law: the simple fact that the desired result is obtained by this means does not justify the employment of that method itself: nor yet does the desire of marriage partners — most legitimate in itself—to have a child, suffice to prove the lawfulness of a recourse to artificial insemination for the fulfilment of that desire.

"It would be false to believe that the possibility of a recourse to that method would render a marriage valid between two persons who are unfitted to contract marriage be-

over, it is superfluous to indicate that the active element can never be lawfully obtained by acts that are contrary to nature.

"Although one may not exclude *a priori* the use of new methods simply on the grounds that they are new, nevertheless, with regard to artificial insemination, it is not only a case of being extremely reserved, but it must be rejected entirely. With such a pronouncement one does not necessarily proscribe the use of certain artificial methods intended simply either to facilitate the natural act or to enable the natural act, effected in a normal manner, to attain its end."

(With acknowledgements to The TABLET 8th October, 1949.)

The B.M.S.A. is playing a useful role in investigating students' problems and advocating solutions to them. It deserves the backing of all medical students, for no case, however good, can succeed unless it is well supported by the evidence and effort of the majority of those concerned.

BRITISH MEDICAL JOURNAL, 3rd. Sept. 1949.

THE ACTIVITIES OF THE ASSOCIATION

JANUARY—SEPTEMBER 1949

The start of the year saw the formation of a new Council, the members of which were elected at the Annual General Meeting held on 21st January. At the first Council meeting Prof. J. E. Debono B.Sc., M.D., F.R.C.P., was re-elected Director of the Association.

Following close on the publication of the Supplement, which was dedicated to the talk given by the Hon. Minister of Health and Social Services on the National Health Scheme, the second number of "The Chest-Piece" made its appearance early in April.

Of particular import was the re-shuffle of books in the Library of the Association. New additions have been made in the form of new purchases and a generous donation of medical books by Mrs. J. Ruggier de Conti Manduca.

Several lectures were held, and visits to various hospitals were organised under the auspices of the Association. Other activities included correspondence on Final Year Examinations, National Health Service, and provision of suitable student quarters in the teaching hospital. A serious stumbling block to increased activity during the period was the approach of final year examinations especially in the case of the Intermediate and Academical Courses of Medicine and Surgery.

The true aim of the teacher must be to impart an appreciation of method and not a knowledge of facts.

KARL PEARSON.

UNIVERSITY DEGREES

The degree of M.D. was conferred by the Royal University of Malta, on 1st. October, 1949, on the following gentlemen:

J. A. Attard.
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F. Borg.
J. E. Briffa B.Sc.
V. Briffa.
A. P. Camilleri.
L. A. Camilleri B.Sc.,
C. Cassar.
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