

1953

The Chest-Piece

Vol. 1. No. 9.

THE JOURNAL OF THE BRITISH MEDICAL STUDENTS' ASSOCIATION

(Malta Branch)

*"In necessariis unitas, in non-necessariis libertas,
in omnibus caritas."*

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THE BRITISH MEDICAL STUDENTS' ASSOCIATION

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EDITORIAL

*"The fault dear Brutus is not in our stars
But in ourselves"*

We must cease to be petty. We must no longer be satisfied with the second best. We must get rid of the habit so prevalent today here in Malta, of adopting a crouching defensive attitude. We must be realists and live today and in the future, not in the past. We must not misconstrue genuinely friendly gestures with unfounded suspicion, nor must we be glibly taken in the subtilities of those who are not our friends. Let us hold ourselves proudly or if we have no cause for pride our is the fault. Respect for superiors is honourable, bowtowing is vile. However the true sign of greatness is respect for subordinates.

It may seem to many that what we have written in these pages is beyond the scope of this magazine. However we feel that no effort should be spared to stir the dreamers. Almost six years have slipped away since we wrote in another publication that the time was ripe for our fellow-countrymen to dare to think and not to wander dull and unseemingly to disaster.

Our greatest enemies are among ourselves. Among them are those who believe in our own inherent inferiority. How often have you heard that nauseating comment "Ah, but this is Malta". It is this attitude that undermines morale and inevitably leads to actual inferiority.

We can no longer afford to squabble among ourselves. Malta does not need any more politicians, it must have statesmen. We have lost much by pulling each other down into the clogging mire of mediocrity and despair, consumed with jealousy and hate, as the lost souls in Dante's Inferno, rather than support those who have brought honour to their country. It is in unity alone that we can progress as a Nation. There is much to be done. It can be done, if we do not waste our talents in petty bickering and weakening disunity.

The many doctors who have gone abroad have found that the World knows little of Malta. Some have most peculiar ideas about our Islands, others none at all. The fault lies with those among us who fail to realise that Malta can no longer be so insular in outlook. Malta cannot support an increasing population indefinitely. The prospects of those who leave these shores would be much better if the world knew more about Malta. Our official representation abroad is bad. It is shoddy. This is perhaps due to those who think the outside world unimportant to Malta.

There are many traditions that Malta can be proud of. Not the least of these is that of Medicine. Maltese doctors have won fame in many fields and a few are world authorities on certain diseases. We are indeed proud to note that the Dean of the Faculty of Medicine was chosen to preside over the conference on Human Brucellosis in Barcellona last summer and also that he and his surgical colleague spoke at the World Conference of Medicine in London. The Professor of Dentistry attended the EETH International Dental Congress and participated at many high-level meetings in his capacity of Hon. Vice-President of the Education Commission of the Federation "Dentaire Internationale" and as a member of the Executive Council and Oral Hygiene Commission.

In these days of intensive and narrowing specialisation it is becoming far more necessary for a doctor to keep himself orientated by a broad outlook. He should indeed master his speciality but not let it master him.



We congratulate the following on their appointment :—

Dr. V. Griffiths B.Sc., M.D., F.R.C.S. — Professor of Anatomy

Dr. G. Xuereb B.Sc., M.D., Ph.D., (Oxon.) — Professor of Pathology.

Dr. O. Zammit, M.D., M.Sc. (L'pool.), M.R.C.O.G. (Lond.) — Professor of Obstetrics and Gynaecology.

Dr. J. Borg, B.Sc., M.D., M.R.C.O.G. (Lond.), D.G.O. (Dubl.) — Junior Accoucheur and Gynaecologist.

DIFFERENTIAL DIAGNOSIS OF LYMPHADENOPATHY

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The aim of this paper is primarily to help the senior medical student in learning methods of diagnosis and applying them in his clinical work — in other words my intention is to familiarise the student in the philosophy of medical diagnosis.

The diagnostic field of lymph node enlargement is vast and a nightmare both to the clinician and pathologist. The first requisite is to know what the causes of lymph node enlargement could be, hence I am beginning by a classification which to my mind is as good as any other. This is followed by the clinical features of each particular disease, by the investigations which are of help in the diagnosis and finally by the pathological picture of the enlarged gland.

Enlargement of Lymphatic Glands.

A. Infective

- (a) *Acute.*
 - 1. *Tonsillitis.*
 - 2. *Diphtheria.*
 - 3. *Scarlet fever.*
 - 4. *Rubella.*
 - 5. *Measles.*
 - 6. *Glandular fever.*
 - 7. *Plague.*
 - 8. *Typhus.*
 - 9. *Septic skin conditions.*
- (b) *Chronic.*
 - 1. *Tuberculosis.*
 - 2. *Syphilis.*
 - 3. *Boeck's sarcoid.*
 - 4. *Chronic skin infection.*
- B. Neoplastic.

(a) *Reticulo-endotheliosis (Reticulosis)*

(b) *Lymphoblastomas:*

- 1. *Follicular lymphoblastoma*

2. *Lymphosarcoma—*

- i. small-cell type.
(malignant lymphocytoma)
- ii. large-cell type.
(reticulum-cell sarcoma)

3. *Hodgkin's disease.*

4. *Mycosis fungoides.*

5. *Lympho-epithelioma.*

6. *Benign lymphoma.*

(c) *Leukemias—*1. *Lymphocytic.*

2. *Myelocytic.*

3. *Monocytic.*

(d) *Secondary deposits.*

Clinical Features.

Acute infectious adenopathy. Multiple masses that appear rather suddenly, associated with fever and malaise, are usually an infectious adenopathy. If the process is bilateral, and especially if there is evidence of considerable constitutional reaction, one of the acute infectious diseases must be thought of. The node may increase in size rather rapidly and become tender. They are discrete, firm, but not hard, and move freely in their bed. The overlying skin is normal. The deep cervical chain is involved usually, although glands of other areas may become enlarged.

In the child such disease as an acute upper respiratory infection, scarlet fever, diphtheria and measles must be considered. In scarlet fever especially, one of the first diagnostic signs is bilateral cervical adenopathy associated with sore throat and the typical strawberry tongue. In measles, the Koplik's spots are pathogno-

monic. With German measles (*rubella*) the occipital and posterior cervical glands are the first to become enlarged. In diphtheria the marked inflammatory involvement of the tonsillar region with membrane formation should at once point to the necessity of a culture. With tonsillitis, if unilateral, the enlarged glands, are, as a rule, confined to the side involved.

In the presence of a subacute or chronic oral infection such as *Vincent's angina* a cervical adenopathy may present for many days or weeks, even months.

In childhood due to the large amount of lymphoid tissue in the upper respiratory tract and also probably because of the susceptibility to lymphoid hyperplasia, an adenopathy without causative factor is common. It is found in the undernourished child living under poor dietetic and hygienic conditions. Vitamin deficiency is usually present. Such children are prone to develop low grade infection especially of the nasal and pharyngeal mucous membranes.

Frequently very early in the course of *acute infectious hepatitis*, before jaundice is present, a soft tender linibean-sized gland can be felt along the posterior border of the sternomastoid muscle low in the right side of the neck (Barker's node). At this stage of the disease, the only other physical findings will be a tender liver and a small localised area of tenderness in the right costovertebral angle.

In *acute infectious mononucleosis*, quite frequently the glands in the posterior triangle on one side become enlarged and soon such an adenopathy may be found on the opposite side. In some instances there is marked involvement of all the cervical as well as the axillary and inguinal glands. The glands often become painful. Such a syndrome appearing in a child or a young adult with a history of exposure

to the disease and fever with an absolute high mononuclear leucocyte count makes the diagnosis quite likely. The diagnosis may be verified by a positive heterophile antibodies test, the patient's serum agglutinating sheep erythrocytes in higher dilutions than normal. In some instances the spleen and, at times, the liver may be enlarged. The disease runs a course of from 2-4 weeks.

In *bubonic plague*, the adenopathy comes on 48 hrs. after a child with high fever, extreme prostration and headache. There is present a high white count. The diagnosis can be made by aspiration from a gland and culturing.

Regional adenopathy may also occur in acute skin conditions e.g. erysipelas.

Chronic infectious adenopathy.

Tuberculosis. Onset insidious, often only one area being involved. The onset may be synchronous with malaise, sweats, and a low grade fever with loss of weight. In the beginning the nodes are discrete, freely movable and not tender. There is a tendency for a progression in the glandular involvement so that other regions are affected; however, in most instances the site of maximum reaction is one area. Here the glands increase in size rapidly and tend to become agglutinated to form an irregular mass. With agglutination the mass tends to become fixed not only to the skin but surrounding deep structures such as the sternomastoid muscle and the deep blood vessels. In some cases the overlying skin becomes bluish red and softening of the mass may be noted. At times this secondary change may take place quite suddenly, being accompanied by anorexia, headache and rise in fever signifying a secondary pyogenic infection. Rupture of the abscess often occurs and following this the mass decreases in size considerably; however, a residual mass and a chronic draining sinus remains in

most instances. Direct smear from the discharge may rarely reveal the tubercle bacillus. Unless there is virulent secondary pyogenic infection, guinea pig inoculation from the discharge may prove positive. In those cases where the glands do not break down but remain discrete the only means of an accurate diagnosis is through biopsy. The recognition of active tuberculosis elsewhere in the body is of paramount importance in every unproven case.

Syphilis. In the young or middle-aged adult, bilateral cervical adenopathy associated with involvement of the axillary and inguinal glands and especially the epitrochlear glands must suggest syphilis. The postauricular glands are often the first to become enlarged. Such an adenopathy occurs usually during the second stage of syphilis and may be associated with sore throat, mucous patches and headaches. The Wasserman reaction is positive and a skin rash not infrequently is present. The glands remain discrete and never break down. In some instances a biopsy may become necessary.

Boeck's Sarcoid. Originally described as sarcoma-like nodular lesions of the skin, sarcoid is now recognised as a generalised systemic disease in which there is most commonly involvement of lymph nodes, lung, bone marrow, spleen, liver, paortid and other organs. Etiology unknown. It has been considered as an atypical form of tuberculosis — but not proved. Closely related conditions in which sarcoid lesions are found include regional ileitis and nuesparotid fever (Hurfordt's syndrome).

Neoplastic adenopathy.

1. *Reticulo-endotheliosis* (reticulis). Rare condition in which there is diffuse hyperplasia of the reticulo-endothelial system to the point of replacement of normal structures. It may occur at any age but it is more frequent in infant and young children. The cha-

racteristics include splenomegaly, hepatomegaly, anaemia, purpura, and bony changes such as rarefaction and cyst formation. A fatal ending is reached in ten weeks to ten years.

2. *Follicular lymphoblastoma.* It is a relatively benign disease of lymph nodes and spleen, in which the characteristic feature is a marked increase in number and size of lymph follicles. It occurs in adults, the average age being over 40. The blood picture is normal and constitutional symptoms mild. Ascites is a common accompaniment. The tissue is peculiarly radio-sensitive, and the prognosis is for longer survival than in most other lymphomatous diseases. Many cases have a late malignant phase. The lymph nodes are enlarged, firm, and discrete. The spleen is usually greatly enlarged.

3. *Lymphosarcoma.* Malignant tumour which can arise from any aggregate of lymphoid tissue. It may occur at any period of life, but the average age is about 45 yrs. Constitutional symptoms and blood changes are lacking in the early stages. External lymph node enlargement is the most frequent beginning, and the cervical nodes are most often affected. The gastro-intestinal tract is frequently involved. The tumour tissue is highly radio-sensitive. Lymphosarcoma probably arises from the undifferentiated mesenchymal stem cell of lymphoid tissue. Lymph follicles are composed of two types of cells, the small lymphocyte arranged about the periphery and the large reticulum cells of the germinal center. Differentiation may be different in degree and direction, so that two types of lymphosarcoma may be distinguished, a small cell type and a large cell type.

4. *Hodgkins disease.* This involves lymph nodes or lymphoid tissue elsewhere, as in the alimentary tract, spleen and rarely bone-narrow. Etiology unknow. Most popular conceptions

are that it is (i) a chronic infective granuloma or (ii) a true neoplasm. The belief that it is an atypical form of T.B. has been abandoned. A fatal ending occurs after an average duration of 2 yrs., but length of life varies from a few months to ten years. Males are affected more than twice as frequently as females. It may occur at any age but the higher incidence is in young adults.

The beginning is usually a painless enlargement of a group of lymph nodes, most frequently in the neck. Blood changes are inconstant but there may be a moderate polymorphonuclear leucocytosis, with lymphopenia, and eosinophilia is occasionally present. Anaemia develops in later stages. Fever of the "Pel-Ebstein" type is present. The nodes are at first discrete, but in late stages matted together. Diagnosis is usually made by biopsy of a lymph node.

5. *Mycosis fungoides*. Is considered by some to be a lymphoblastomatous disease of the skin related to leukemia or lymphosarcoma, and by others to be an infective granuloma. In early stages, there is an ecsematoid eruption, followed by a tumour phase.

6. *Lympho-epithelioma*. Is a highly radio-sensitive malignant tumour arising in the naso pharynx in which there is intimate association of lymphoid tissue and immature squamous epithelium.

7. *Leukemia*. Is a condition of lawless overgrowth of white blood cells and proceeds to a fatal ending. It is probably best regarded as a neoplastic change in the blood forming tissues, with the excess of white cells, many of which are immature or abnormal forms. Those unusual cases in which excessive or abnormal white cells are not found in the blood are referred to as aleukemic leukemia. According to the type of white cell involved, the leukemias are classified as lymphatic,

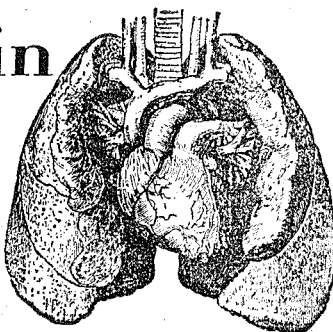
myeloid, and monocytic. Each of these may be acute or chronic, but the acute types are difficult to distinguish from each other. There is a different age incidence from the various types. Acute leukemia has its maximum incidence in the first decade, chronic myeloid leukemia between 25—45 yrs. and chronic lymphoid leukemia between 46—60 yrs.

(i) *Acute leukemia*. May begin suddenly and run a rapid course of a few weeks or months. Early stage may be aleukemic, but later the white blood count becomes very high, though less than the extreme figures of chronic leukemia. Anaemia and thrombocytopenia are often severe. The majority of white cells in the blood are myeloblasts or lymphoblasts, distinction between these primitive cells being difficult and unreliable.

(ii) *Chronic myeloid leukemia*. There is a great increase in granular leucocytes in the blood, and many immature cells (myelocytes and myeloblasts) are responsible in blood smears. The total white count may become very high, reaching 500,000 or more per c.mm. in some cases. Platelets also may be increased, but R.B.C. progressively diminish in number. The course of the disease may extend over several years before the inevitably fatal end. The essential lesion is a myeloid hyperplasia throughout the bone marrow. The spleen becomes enormously enlarged. Lymph nodes are slightly enlarged.

(iii) *Chronic lymphatic leukemia*. The white count is lower than in the myeloid type. It is usually around 100,000 and often 90% or more are lymphoid cells. Red cell reduction and anaemia occur in late stages. The lymph nodes all over the body are enlarged.

(iv) *Monocytic leukemia*. Includes two varieties: (a) The Naegeli type is characterised by immature cells inter-

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mediate between myeloblasts and monocytes. (b) The Schilling type, when the immature cells resemble monocytes and reticulo-endothelial cells.

INVESTIGATIONS

1. *History.* Past history. Family history.
History of present condition.
2. *Age.* Infancy and adolescence: T.B. and Glandular fever.
Middle age: Hodgkin's.
Lymphosarcoma.
Leukemia.
later: Leukemia.
3. *Lymph glands.* Localised with fever and tenderness:—
i. Pyogenic
ii. Tuberculosis.
Localised without fever and tenderness:
i. Lymphosarcoma.
ii. Syphilis.
iii. Hodgkin.
Generalised enlargement with fever:—
i. Acute phase of Leukemia.
ii. Syphilis.
iii. Hodgkin.
Generalised enlargement without fever:
i. Chronic leukemia.
Fluctuant nodes:— i. Tuberculosis.
ii. Pyogenic
Discrete and elastic: i. Leukemia.
ii. Hodgkin's.
4. *Fever.* i. Septic type: Inflammation.
Acute Leukemia.
ii. Pel-Ebstein type: Hodgkin's
iii. Low-grade type: Tuberculosis.
[losis.
5. *Splenomegaly.*
i. Large spleen and generalised enlargement: Leukemia.
ii. Moderate spleen and cervical adenopathy: Hodgkin.
iii. Slight spleen: Glandular fever.
Lymphosarcoma.
6. *Blood Picture.*
i. Normal; Early neoplastic. (probability)
ii. Leucocytosis: Infection.
iii. Mild anaemia

Monocytosis Tuberculosis.

Lymphocytosis

iv. Marked anaemia

Lymphopenia Hodgkin.

Leukopenia

v. Marked leucocytosis

Lymphocytosis Leukemia

vi. Normal R.B.Cs and W.B.Cs.

Eosinophilia Syphilis.

Lymphocytosis

vii. Normal R.B.Cs.

Marked lymphocytosis

Glandular fever.

Reider nuclei.

7. *X-Ray Chest.*

Mediastinal Adenopathy:—

Hodgkin.

Lymphosarcoma.

Leukemia.

8. *X-Ray sinuses and Exam. of nasopharynx.*

To detect primary growth if there is one.

9. *Wasserman Reaction.*

10. *Paul-Bunnell test.*

11. *X-Ray Bones.* X-Ray evidence of bone infiltration (osteosclerotic leukemia), accounts for the occasional severe pain that accompanies leukemia or Hodgkin's disease.

12. *Biopsy of gland.* Most important to establish diagnosis with certainty.

(a) *Lymphadenitis.*

Macro. Swollen and tender. In pyogenic infection suppuration occurs.

Micro. The sinuses are filled by polymorphs or mononuclear cells.

(b) *Glandular fever.*

Micro. Throughout pulp, in the sinuses, and on the edge of the germinal centers are large numbers of the specific large mononuclear cells.

(c) *Tuberculosis.*

Macro. In both proliferative and caseous, the glands are at first

enlarged, firm and discrete, while their cut surface is grey and translucent. The caseous variety is later characterised by small, soft, yellow, opaque areas.

Micro. Basic lesion is the tubercle follicle. The centre is occupied by endothelial cells (faintly acidophilic, non-granular cytoplasm and oval, feebly stained, vesicular nucleus.). These are surrounded by lymphocytes and plasma cells. Each follicle also generally includes one or more plasmodial masses. These giant cells may be situated amongst the endotheloid cells or at the endotheloid and lymphocytic zones. It may occupy the centre of the follicle.

(d) *Follicular lymphoblastoma.*

Macro. Enlarged. Firm and discrete (until late).

Micro. The essential change is a tremendous increase in number and size of the germinal centres which are surrounded by a narrow rim of small dark mature lymphocytes. The condition is easily distinguished microscopically from the other type of lymphoblastoma by the maintenance and exaggeration of the follicular architecture.

(e) *Lymphosarcoma.*

Micro. Essential feature is disruption and obliteration of the architecture of the lymphoid tissue by the cellular overgrowth. Pleomorphism is not a feature, most of the cells being similar in appearance. (small cell or large cell.) Mitoses are present, but not abundant.

(f) *Hodgkin's*

Macro. At first discrete but later matted together.

Cut surface has a greyish, translucent, 'fish-flesh' appearance.

Micro. (i) Pleomorphism of cellular tissue, with loss of normal architecture.

(ii) Sternberg or Dorothy

Reed cells (large hyperchromatic cells).

(iii) The presence of eosinophiles.

(iv) Fibrosis.

Pleomorphism is prominent and there is a mixture of the specific cells, giant cells, plasma cells, lymphocytes, leucocytes and eosinophiles. Fibrosis is important in distinguishing Hodgkin's from other lymphoblastomatous conditions such as lymphosarcoma and lymphatic-leukemia.

(g) *Chronic lymphadenitis.*

Micro. Hyperplasia of the reticulo-endothelial cells, large numbers of the endothelial cells becoming swollen, rounded and cast off into the greatly dilated lymph sinuses, an appearance to which the name of "sinus catarrh" is given.

(h) *Sarcoidosis (Boeck's Sarcoid).*

Micro. Difficult to decide from tuberculosis. The giant cells are larger from those of tuberculosis and there is generally no surrounding lymphocytic infiltration. Silver stains show a delicate reticulum which is absent, owing to destruction, in T.B.

(i) *Syphilis.*

Micro. The histology is not characteristic i.e. a proliferation of epitheloid cells, lymphocytes and plasma cells. In the primary and secondary forms, the demonstration of the spirochaeta pallida is usually easy.

(j) *Reticulosis (histiocytic medullary reticulosis)*

Micro. Cellular proliferation in the medulla, which consists principally of phagocytic histiocytes containing R.B.Cs. and nuclear debris.

(k) *Lymphatic Leukemia.*

Micro. The nodes are crowded with lymphocytes which entirely obliterate the usual architecture.

THE MEDICAL ASPECTS OF THE CONGRESS

By Montfort

The first National Congress of Students organized by the Students Representative Council was held from October 29 to November 1, 1953. The theme of the Congress was "The Status of the Students". The programme included Plenary Sessions, Faculty Sessions and an Exhibition of "Student Life in Malta".

The Exhibition which was held in the Examination Hall of the University was inaugurated by His Grace the Metropolitan Archbishop on Thursday, October 29, 1953. The stands of the different societies were well laid out and organized although with a little more preparation and a little more thought it would have been possible to do more justice to the very high standard of exhibits which were on show. The stand of the British Medical Students' Association was undoubtedly one of the main centres of attraction. Visitors were able to peer through microscopes and see such things as tubercle bacilli from a tuberculous sputum, red blood corpuscles from a normal blood smear, white blood corpuscles from a case of myeloid leukaemia, histology of the normal lung, and melanomatous tissue. A number of anatomy specimens were on show as well as such clinical and laboratory instruments as E.S.R. apparatus, sphygmomanometer, Haldane's and Sahli's Haemoglobinometer, Lovi-wend comparator, Thoma haemocytometer. B.S.R. apparatus and others. Short explanatory notes on each exhibit were present while at the same time students on duty at the stand were kept busy explaining to the people visiting the stand the intricacies and workings of the various specimens. Quite a large number of people availed themselves of

the invitation to have their blood pressure examined on request. Medical journals and periodicals, photographs of students at hospital as well as a photograph of Dr. Victor Captur, B.Sc., M.D., Founder and first President of the Malta Branch of the Association, were amongst other things on show.

The British Medical Students' Association was entrusted with the organization of the Medical Faculty Sessions of the Congress; these included a Pharmacy Session. These Sessions, which were held in the Aula Magna of the University, had as their theme the subject of "Post-graduate Employment". The principal speakers were Professor Walter Ganado, B. Sc., M.D., M.R.C.P., who spoke on "The Suggested Reforms in the Medical Profession in Malta", Professor A. J. Craig, B.Sc., M.D., F.R.C.S., who spoke on "Post-graduate Employment in Britain", Dr. J. Naudi, M.D., who spoke on "The Colonial Service", and Mr. A. Darmenia, Ph.C., who spoke on "The Pharmacy Student after Graduating". Interesting discussions were held after each talk and at the end of the last session a number of resolutions were put forward and discussed. The following are the resolutions which were finally approved by the students:

1. That a reform in the set-up of the medical services in Malta is urgently required.

2. That a General Medical Council be set up for the purpose of controlling and exercising discipline amongst the members of the medical profession and for the purpose of advising the Government on all matters of medical policy and on all matters of interest to the

medical profession.

3. That a Hospitals Board be set up to advise the Government on matters affecting the Hospitals especially as regards administration, appointments, salaries and grievances from medical and allied personnel.

4. That a complete reform is necessary in the present system of remuneration for doctors, because as things stand at present no consideration is being given to the long and difficult training which a medical graduate has to undergo both before and after qualifying and no consideration is being given to the great and responsible services being given by doctors to the country.

5. That lady doctors should be given a salary equal to that of men doctors.

6. That as suggested by the local B.M.A. scheme of reform the fee of 2/6 for an ordinary visit be raised to 5/- and that practitioners should be asked either not to charge anything at all or else not to charge less than the official fee.

7. That as long as openings exist in the British Colonial Service, in the Services, in English Hospitals and elsewhere no steps should be taken to limit either the number of students joining a medical course or else the number of doctors qualifying.

8. That the Medical and Health Department be requested to ask for from the competent authorities and to furnish medical students with detailed information about conditions of work and pay in the Colonial Service.

9. That the Royal University of Malta be requested to press for the recognition of our local medical degree in all

the countries of the British Commonwealth and elsewhere and to inform medical students where such recognition already exists.

10. That the B.M.A. and the B.M.S.A. should inform and invite local parliamentarians, especially doctors, to take up the cause of the Assistant Resident Medical Officers.

11. That the salary of Assistant Resident Medical Officers should be raised to £300 in the first year, £360 in the second year and £420 in the third year.

12. That the Government and the Royal University should see to it that the degree of B. Pharm. be recognised throughout the British Commonwealth and in other countries.

13. That the Royal University of Malta should do everything possible to bring up to standard all the Science Laboratories including those for the study of Pharmaceutical and Medical subjects.

At the last Plenary Session of the Congress held in the Aula Magna of the University the Presidents of the different Faculties read out the resolutions passed by their respective Faculties. The above resolutions were read by the Vice-President of the local branch of the British Medical Students' Association and from the applause and the comments of those present it was more than clear that the suggestions put forward at the Medical Faculty Sessions of our first National Students' Congress had met the approval of the people present at the closing session of the Congress; and these included members of the Senate of the University, Professors, members of the various professions, students and friends.

INTERNAL FISTULAE OF THE DIGESTIVE TRACT

Dr. F. Zammit M.D., D.M.R. (Lond)

It is not intended that under such a heading all sorts of fistulae of the digestive tract be treated exhaustively. My intention is to describe only those cases, which passed through the X-Ray department at St. Luke's Hospital during the last two years. These cases, although rather uncommon, have been chosen because they usually occur as a complication of common diseases of the digestive organs, while some are the result of odd abnormal findings in adjoining organs. The only exception is the case of an oesophago-tracheal fistula, which is usually due to congenital maldevelopment.

Another reason for this selection is to stress the importance of the evaluation of the signs, symptoms and the characteristics of the special investigations, which will lead one to the correct diagnosis of these cases.

1. Oesophago-tracheal fistula.

These cases are becoming more interesting lately, because of the improvement in the surgical treatment with a corresponding decrease in the operative mortality. In fact in a series of 32 primary anastomoses. Swenson had only 5 postoperative deaths.

But these good results depend entirely on:

(a) Earlier diagnosis (Osler, Abbot and Williams state that with early diagnosis 80% may be saved).

(b) Improved pre-operative and post-operative care.

(c) Change in operative technique.

Diagnosis.

An early diagnosis will be made if the symptoms are looked for and well

noted. They are present in the early hours of life.

(1) The commonest, and a very important one, is *excessive salivation*. This is not due to increase in actual oral secretions, but to their accumulation in the mouth on account of the oesophageal obstruction.

(2) During feeds the baby coughs, and temporary cyanosis may be noticed. These signs of respiratory distress are usually repeated every time the baby is given a feed.

Eventually unless this condition is remedied very early in life, pulmonary complications supervene and the general condition of the baby deteriorates towards a fatal ending. The factors which usually contribute to this fatal outcome are:

(a) Starvation

(b) Pulmonary complications

(c) Reflux into the lungs of gastric juice, which is highly irritant to the respiratory membranes.

An incidence of one in 2650 births has been reported by Donnelly. Associated malformations should be looked for; these have been found in 80 out of Swenson's series of 113 cases.

Various forms occur of atresia with with aoesophago-tracheal fistula:

(a) Fistula of trachea with proximal segment of atresic oesophagus. The distal oesophagus segment is blind.

(b) The proximal segment is blind and a fistula is present between the distal segment and the trachea, or rarely the main bronchus.

(c) Communication of both proximal and distal segments with the trachea.

(d) A rare form, the H type, is a tracheo-oesophageal fistula without atresia.

The diagnosis is usually made by paying all due care to the presenting symptoms and by passing gently a small catheter and noting whether any obstruction is met with; or in the case of a normal oesophagus, the hearing of the characteristic gurling sound as the catheter enters the stomach. The latter sign, however, does not exclude the H type.

If this is not convincing enough, confirmation is sought by X-Ray examination. First a plain film is taken to see whether gas is present in the stomach and intestines. Then a No 8 soft rubber catheter is passed through the nose. Lipiodol 0.5 to 1 c.c. is injected slowly, under screen control, to spot the fistula. *Barium should not be used*, because it causes a severe reaction in the lungs. If the intestines contain gas and a blind upper pouch is found, it means that atresia is present and there is also a tracheal fistula with the lower oesophageal segment. If no gas is present in the intestines and lipiodol enters the trachea, it follows that there is a fistula of the upper segment with the trachea.

If gas is present in the intestines and lipiodol enters the trachea, a double fistula exists. When there is a fistula without atresia, lipiodol may enter the trachea, while the outline of the oesophagus is normal. In the latter case more care should be taken to establish the presence of such a state of affairs, as cases have been reported in which lipiodol failed to show the fistula while diodrast (a nonviscous opaque medium) did. The prone position is also recommended in such cases, as the fistula usually lies on the back of the trachea and the anterior surface of the oesophagus. Cases of fistula without atresia are easily missed. Several cases have been reported to have gone on undiagnosed to adult life.

One case was 58 years of age when it was diagnosed and treated.

Case I. (Fig. I)

A newly born child of healthy parents. 3rd. pregnancy. Normal delivery. Seen when 30 hours old because of persistent salivation and choking and cyanotic attacks on every attempt at feeding. The general condition of the baby was excellent, but there was a second congenital defect of a mild nature — a vaginal anus. The baby was admitted to St. Luke's hospital, where the diagnosis of oesophageal atresia with fistula was made.

X-Ray examination showed flooding of bronchial tree with lipiodol which was injected through a nasal catheter. The middle portion of the oesophagus was never traced. It was difficult to establish the true state of affairs as the baby coughed each time lipiodol was injected, and the trachea was wholly outlined with lipiodol. Therefore, since the examination could not be controlled by screening at the time, inhalation of lipiodol through the larynx could not be definitely excluded.

The baby was operated upon, and an atresia of the oesophagus was found with a blind upper end communicating with the trachea just above the carina and lower end of the oesophagus communicated with the trachea at the upper end of the main bronchus.

The baby did not seem to improve, post-operatively, despite every attention and died 14 hours later.

II. Cholecysto-duodenal fistula.

Spontaneous internal biliary fistula are rare. Several types occur; the most common is a fistula between the gall-bladder and some part of the alimentary tract. A fistula from the common bile duct to the gastro-intestinal tract is far less frequent.

Gall-stones in 90% cases are the

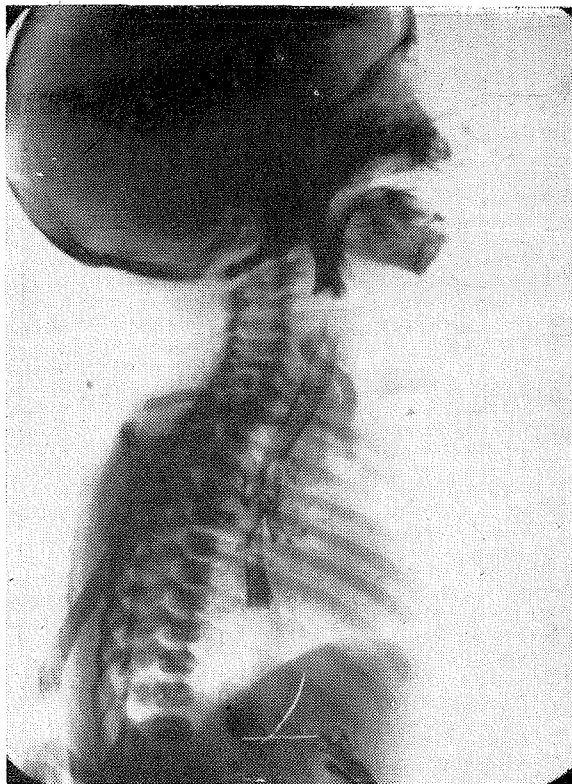


Fig. 1. OESOPHAGO - TRACHEAL FISTULA
Trachea and main bronchi well outlined with lipiodol, Upper part of oesophagus faintly seen above carina. Note gap of oesophagus at side of atresia. Lower end of oesophagus well shown in its proximal part, communicating with trachea near bifurcation.

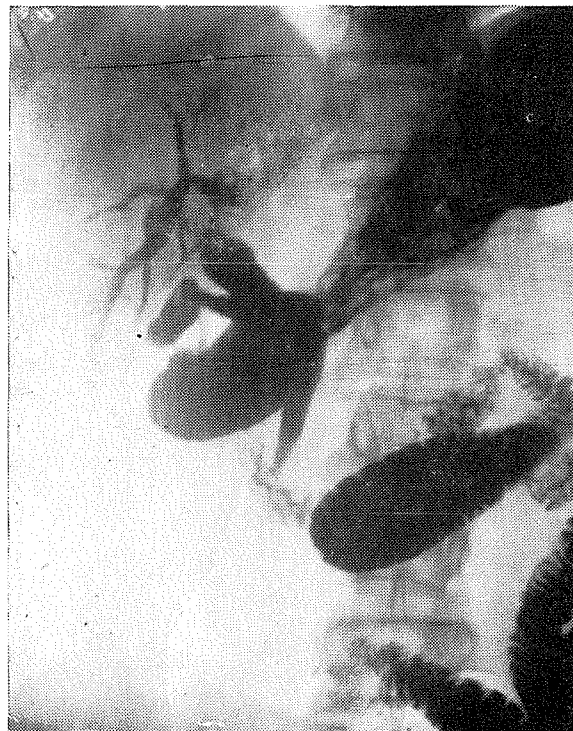


Fig. 2. CHOLECYSTO — DUODENAL FISTULA
Biliary ducts outlined by barium (after barium meal). Fistula of gall-bladder with upper end of duodenal cap. Common bile duct full of barium down to Spincter of Oddi.

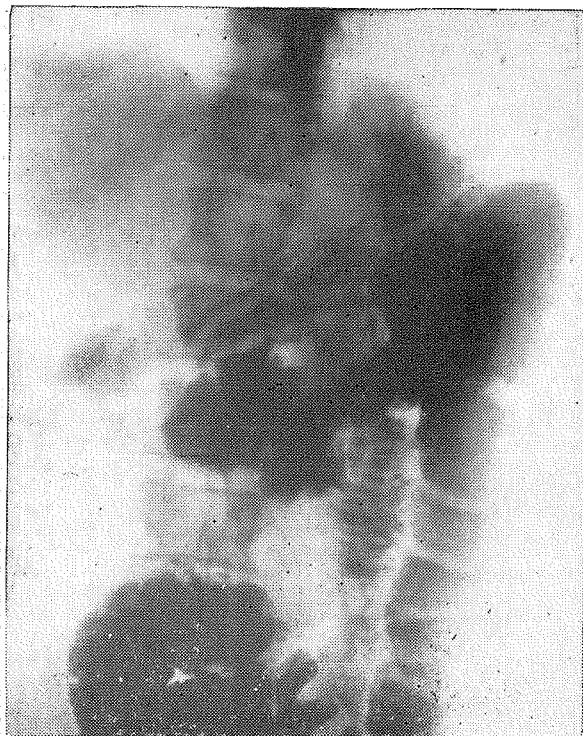


Fig. 3. GASTRO — JEJUNO — COLIC FISTULA
 Note filling of stomach by barium solution introduced through rectum (barium enema), as the head of the enema reached the mid-transverse colon. Gastric mucosal rugae as distinct from haustration of colon.



Fig. 4. GASTRO — JEJUNO — COLIC FISTULA
 Gastrectomy with gastro-enterostomy. This film was taken 1 hour after barium meal. Note filling of descending colon by barium — while caecum and proximal half of colon is empty of barium. This shows that barium has reached this part of the colon through the fistula at middle part of transverse colon.

primary cause of a cholecysto duodenal fistula; 6% are due to duodenal ulcer, the other 4% being attributable to cancer, abscess and other causes. Wakefield et alia reported in 1939 a series of 176 cases operated on at the Mayo Clinic, in which not a single case was due to perforation of a duodenal ulcer or to a carcinoma.

The sex incidence of 3 females to one male in Judd and Burder's series of 153 cases corresponds to the prevalent occurrence of cholelithiasis in females.

The gall-bladder adheres to almost any abdominal organ. If there is concomitant obstruction of the duct, it would probably be the determining factor for perforation and hence fistula formation.

The clinical picture is not characteristic; the presenting symptoms being usually those of the original condition, which had given rise to the formation of the fistula. The only sign, which makes diagnosis fairly certain, is the passing of a biliary calculus of considerable size in the faeces or the vomit.

Radiological investigation is the only means for definite pre-operative diagnosis. This is however by-passed in many cases, as these cases present themselves as emergencies with the signs of acute abdomen.

The fundamental radiological sign is the presence of air in the biliary system, noted in a straight film, or the outline of the hepatic and biliary ducts by barium, when a barium meal is done.

Case II. (fig. II)

L.G. Male — age 67 years. He was seen as an out-patient on 17-9-53 complaining of a feeling of oppression in the epigastrium. 4 months ago had a severe epigastric pain, which lasted for 1 hour. Since then these attacks of pain have recurred accompanied by nausea. No relation to meals, but at times pain

awakened him at night. No loss of appetite.

Operated upon for enlarged prostate 1½ years ago. 40 years ago had a laparotomy for a gastric complaint, whose exact nature could not be ascertained.

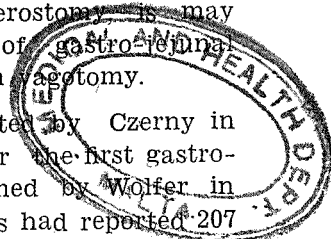
A barium meal was given, and as soon as the barium entered the duodenum it flooded the gall-bladder and the hepatic system. The duodenum showed no deformity, except for the fistulous track which communicated with the base of the gall-bladder.

III. Gastro-jejuno-colic fistula.

Gastro-jejuno-colic fistula is a serious complication which follows posterior gastro-enterostomy, is the treatment of duodenal ulcer. Other causes are cancer of the stomach or adjoining organs and inflammatory processes. But a gastro-jejuno-colic fistula, resulting from these primary diseases, is extremely uncommon. Usually it occurs as a complication of posterior gastro-enterostomy, and may follow any type of gastro-jejunal anastomosis and even vagotomy.

It was first reported by Czerny in 1893, 12 years after the first gastro-enterostomy performed by Wolfer in 1881. By 1940 Thomas had reported 207 cases.

The pathological process which produces the fistula is essentially the same as in peptic ulceration. Craters ulcerate deeply. The surrounding inflammatory reaction forms adhesions with adjacent structures, particularly the colon, with eventual ulceration of the colonic wall. The fistula is near the distant stoma, most frequently in the efferent loop, 4 to 8 cm. distant from the stoma. It is most unusual to find it in the afferent loop. Cases have been described in which the fistula and the ulcer were separated by such a distance as to lead to the inference that the jejunal



ulcer was not involved in the production of the fistula.

The frequent occurrence after retro-colic gastro-enterostomy is related to the fact that this is the operation which is most frequently performed in such cases; but fixation of the stoma to the transverse meso-colon is probably also a factor, owing to the closeness of of the colon to the site of the stomal ulceration. In this case, the fistula may result from the penetration of a relatively acute ulcer; it is then an opening of short length with minimal surrounding fibrosis. If, on the other hand, the fistula is the late result of an abscess in the meso-colon it may track 1 to 2 cm. in length through a mass of scar tissue.

The incidence of gastro-jejuno-colic fistula has been reported as follows: Wright (1935) 8.7% of 458 cases. Judd and Hoerner (1935) same proportion in 597 cases. Walters and Glogett (1939) 13.6%. Dowdin (1948) gives the highest figure of 22.4%. These estimates may be however exaggerated as they are based on patients who return for treatment of gastro-jejunal ulcer.

The sex incidence is computed to be 5 women in about 400 cases. Judd and Hoerner had one female in 52 cases. Time after operation varies from one month to 27 years.

When a gastro-jejuno-colic fistula is established, a serious state of affairs exists. The food passes directly into the colon. The physiological mechanism is altered and digestion becomes inadequate. Gastric Juices cause irritation of the colon, which consequently gives rise to diarrhoea with undigested food particles. Nutritional deficiency supervenes and renders the patient a poor operative risk.

Diagnosis.

1st. Stage. The symptoms of the primary disease, usually a duodenal ulcer, predominate.

2nd. Stage. Post-operative period. This is usually a period of relative freedom of symptoms and well being, which lasts from a few months to several years. After this free period, complaints related to the presence of the jejunal ulcer reappear. This is different from the picture of the primary duodenal ulcer. The site of the ulcer pain shifts to the left side of the abdomen in the region of the umbilicus. The discomfort is irregular in occurrence. Bleeding is present and may be silent.

3rd. Stage. The formation of the fistula is marked by diarrhoea usually persistent and severe. This is a striking feature which should suggest the development of a fistula. Pain may be relieved at the onset of diarrhoea (this occurred in 12 out of 46 cases).

It was assumed that the diarrhoea is due to the passage of gastric contents into the colon. There are however many reasons for believing that the fundamental disturbance is a small intestine diarrhoea, caused by the passage of the colonic contents into the stomach and jejunum. The amount of gastric contents which passes directly into the colon is small and clinically unimportant. Observations which support this view are as follows:—

(a) The appearance of undigested food in the stools is comparatively rare.

(b) The results of fat analysis of the stool are more consistent with hurried passage through the small intestine than with short circuiting.

(c) Barium introduced into the stomach passes directly into the colon in less than half the cases; while barium in the transverse colon invariably passes into the stomach and jejunum.

(d) Inflammatory changes are present in the mucosa of the small intestine.

(e) Finally it is observed that opera-

tions which short circuit the transverse colon lead to prompt relief of the diarrhoea and other symptoms.

Vomiting is also prominent and may be faecal. Depletion of calcium result in carpo-pedal spasms or latent tetany. Loss of weight occurs and nutrition deficiency and anaemia are a common finding.

The symptoms occur in this order: Diarrhoea 100%—Loss of weight 84%. — Pain 49%. — Vomiting 42%.

X-Ray examination.

Barium enema under screen control is the best method. It shows the presence of a communication between the colon, stomach, and jejunum with hardly any exception.

Barium meal however may fail to reveal it. It has shown it in only 8 out of 14 cases.

It is not clear why the main flow through the fistula should be from the colonic to the gastro-jejunal end. Some attribute it to a valvular mechanism, but it appears more probably to be due to difference in physiological pressures.

Case III. (Fig. III).

F.S. Male. 42 years of age. Complained of irregular dyspepsia since 1946. Operated upon for duodenal ulcer in 1948, post. gastro-enterostomy, (transcolic). Gall bladder normal. Had vague pains after operation. Reported for abdominal colic six months later. Readmitted at S.L.H. in May 1951 for emaciation and diarrhoea. No pus, R.B.C., or amoeba were present in the faeces. A barium meal was given and follow-through was performed which showed increased mucosal folds of stomach and jejunum (jejunitis), with temporary arrest of barium at proximal loops of jejunum (adhesions were suspected). No evidence of fistula.

Readmitted in 6-11-51 for severe diarrhoea, six motions daily, and

marked asthenia. At barium enema was performed and fistula was discovered when the barium reached the transverse colon.

Case IV. (Fig. IV)

G.C. Male 39 years old. Dyspepsia 11 years.

2½ years ago operated on for duodenal ulcer — Partial gastrectomy with posterior gastro-enterostomy. About one year ago he started complaining of cramp-like pain in hypogastrium radiating to hips and inguinal regions, with feeling of oppression and bearing down in lower abdomen. Sometimes the pain was relieved by taking food. Tarry stools were observed. Since 4 months attacks of pain became more frequent with feeling of distension and nausea and occasional vomiting, at times blood-stained.

Diarrhoea with very loose stools since one month. Loss of weight. Tenderness was present in the epigastrium.

Barium meal showed the presence of a gastro-jejunal colic fistula, with small intestine and distal half of colon outlined with barium in 1½ hours film, while the proximal half of the colon was empty.

Case V.

J.D. 55 years old — male. Since 2 years complained of diarrhoea, watery brownish stools — loss of weight and asthenia.

Since 1 week complained of persistent vomiting, with faecal smelling eructations. 15 years ago was operated on for D.U. and a retro-colic gastro-enterostomy was performed.

A gastro-jejuno-colic fistula was suspected and confirmed by barium enema, which showed the passage of barium into the stomach and jejunum as it reached the middle of the transverse colon.

IV. Utero-colic fistula.

Spontaneous utero-colic fistula is extremely rare, apart from cases due to malignant disease.

When a uterine fistula develops, which is not the result of instrumentation during labour or in the treatment of abortion or other uterine haemorrhages it is usually the terminal event of a pregnancy which has taken a very unusual course.

In fact such cases are, in most instances, accidentally discovered during abdominal operations, post-mortems or X-Ray examination of the abdominal organs for some other reason.

The case which is being described here, is that of a lithopaedion, which after many years became infected and formed a fistula with the sigmoid portion of the colon.

Calcification in a retained dead foetus may take the following forms:

- (a) Calcification of the membranes alone.
- (b) Both the membranes and the foetus are calcified.
- (c) The foetus is infiltrated with calcium salts, while calcification of the membranes is negligible.

The conditions which lead to the development of lithopaedion are the following:

- (i) The pregnancy must be extra-uterine.
- (ii) The foetus must survive in the abdomen for more than three months (otherwise it is absorbed).
- (iii) The condition must escape medical notice.
- (iv) The foetus must remain sterile.
- (v) The necessary conditions for the deposition of calcium must be present (i.e. poor blood supply).

The incidence has been reported as 1.‰ of ectopic pregnancies. Up to 1941

Reeves and Lipman collected 236 reported cases, covering five centuries. The patients' ages range from 30 to 100 years with a period of retention from 4 to 60 years. Umnowa reported a case of a double lithopaedion in the same patient, one was of 2 or 3 months development and 11 years duration; the other was of 6 months development and nine years duration. Another interesting report is the finding of a bilateral tubal pregnancy with transformation into a lithopaedion on one side and into a secondary abdominal pregnancy carried to term on the other side.

Should the sac become infected and occasionally even without infection the disintegrated contents of the shrunken sac may find an outlet through the intestine, vagina, abdominal wall or even bladder. This termination is rarely observed nowadays, as ectopic pregnancies are usually diagnosed and treated and also because the advent of X-Rays has made it easier to discover such cases.

Case VI.

C.G., 52 years old, was admitted to hospital for the passage of blood per rectum.

She had been complaining, since 8 months, of fever (up to 103°F.), pain over lower abdomen and diarrhoea with pain during defaecation.

Since 2 months blood escaped from the anus irrespective of defaecation.

On examination a mass in the lower abdomen was noted which extended towards the left side and was tender. She gave the information that she had been told she had a fibroma uteri since 23 years, that is since about the time of her last pregnancy.

Another most important point, which was missed at the time she was in hospital, was the discovery of a small bone passed with the faeces. The nurse, attending the case, thought it was not relevant to report such a finding having

assumed that the patient had swallowed a rabbit bone.

In view of the presence of melaena, a barium enema was performed and in the lumbo-sacral region a round calcified mass was noted into which the barium flowed. On close examination however foetal bones could be identified in this mass.

The patient was operated upon and a lithopaedion was found which was infected and communicated with the sigmoid colon. This was removed but patient's condition, which was already rather poor from the effects of sepsis and loss of blood, did not improve, and she died a few days later.

I am grateful to Prof. J.E. Debono, Prof. A.J. Graig, Prof. J. Ellul and Dr. E.A. Cachia for access to the clinical notes of these cases.

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The Annual General Meeting of the British Medical Students' Ossociation (Malta Branch) will be held on Monday, the 22nd of February at 4.30 p.m. at the Royal University of Malta.

IMPRESSIONS OF AN INTERNATIONAL CONGRESS

By Dr. E. Agius B.Sc., M.D., D.P.H., D. Bact. (London).

In present-day science inspiration still comes to the individual and much still depends on personal talent, but, beyond primary observations, there lie complexities which demand a wide co-operation. It is therefore essential for scientific workers to pay heed to "lines of communication", to know what has happened in their special field up till the time when they up the work, and to know definitely what is going on at the time. For this purpose scientific journals flourish, scientists correspond privately, and occasionally they meet in provincial or national associations. Still national boundaries should not and do not contain, in the ancient sense of bounding in, the labours of learning. Even in the supposedly less broad-minded past, on such grounds, the French at the height of the Napoleonic wars allowed Sir Humphry Davy freedom of passage throughout Europe. Even in these days of wireless telephony, many feel the necessity of passing boundaries and crossing oceans for the sake of direct personal communications, and some such need has given rise to the habit of scientists, in various specialities, to meet in international congresses. In practice this has proved useful; at worst, it is harmless, and if, in actual fact, it also turns out to be pleasant for those taking part, who should be such a curmudgeon as to oppose it on that score?

In September of 1953 microbiologists from all over the world — over two thousand of them, from fortyone countries — came together at their sixth international congress in Rome. The first such congress had been in Paris, the second in London, the third in New

York, then in Copenhagen, and lastly, in Rio de Janeiro. They had meant to meet every three years but the accidents of war had interfered with these, as with so many other plans. The Society of Microbiologists made a quick recovery and the first post-war congress, in Copenhagen, was a great success, although only Italy of the ex-enemy countries had been represented, and Russia had kept aloof. The Rio de Janeiro venue had been too distant and few Europeans could attend. Rome, in 1953, was an ideal meeting place. Americans welcomed with pleasure an additional excuse to bring them to Europe, and for almost all Europe Rome is not too remote. So they came in their hundreds many bringing their wives as "affiliate" members, but, in a surprisingly large number of cases, wives were full members of the congress, being themselves fully fledged bacteriologists. No ex-enemy country has recovered so well as Italy from war-time devastation and Rome, catering for a vast tourist trade, is now one of the gayest capitals of Europe. The Italians proved ideal hosts and they omitted nothing which could make the congress a success.

There is a remarkable resemblance about international congresses. The right formula having been struck fairly early on, subsequent congresses had but to follow it, but they succeed or fail according to the number and importance of the participants. A very large proportion of the most important microbiologists in the world managed to come to Rome and a list of the members reads like the bibliography in "Topley and Wilson's". Puntoni, him-



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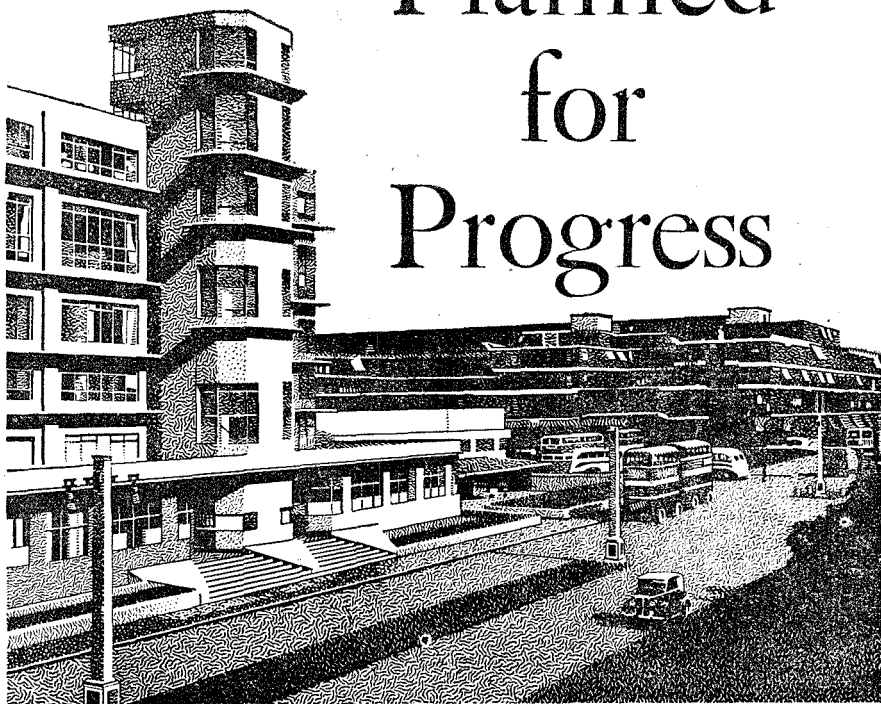
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self the writer of an extensive textbook, was president. The Italian hosts included Ascoli, of the thermo-precipitin reaction for the anthrax bacilli, Petraggiani famous for his medium for cultivating the tubercle bacillus, and Azzo Azzi of Turin. The British contingent had many famous names: Coombs, of the blood test, Cyril Oakley, Stableforth of the Ministry of Agriculture, A. A. Miles, Maitland from Manchester, Downie of Liverpool, G. S. Wilson of the Medical Research Council, J. C. Cruickshank of the School of Hygiene, and Robert Cruickshank of the Wright-Fleming Institute. The United States had famous representatives, including R. E. Buchanan, Reuben Kahn of the Kahn flocculation test, and Albert Sabin, one of the most valued researchers on poliomyelitis. France sent, amongst others, Gaston Ramon, of diphtheria fame, and Lepine, the virologist. There were five delegates from the U.S.S.R. who spoke in Russian and had the synopsis of their papers printed in that language. The World Health Organisation sent four "observers", and the Food and Agriculture Organisation had Sir Thomas Dalling as a member.

Amongst the newer features of Rome is the university city, a conglomeration of large red brick buildings, very frequently with wide flights of marble steps, which house the different faculties, disposed about the central administration building, which also has an Aula Magna that indeed does not belie its name. These buildings are still new and unhallowed by traditions but one feels they may soon get these. Being scattered over a large area, one wearies in going from one to the other, especially in the warm September sunshine, but that is so often a necessity. The Congress had its plenary meetings in the Aula Magna, but then, when it came to real business it split up into

sections. In 1936, in London, a relatively unknown worker, one A. Fleming, read a paper on "Selective Bacteriostasis", to which hardly anybody paid the slightest attention. In the 1953 congress, Sir Alexander Fleming was the president of one of the most important sections, that on "Growth Inhibitors", which all arose out of his own work. There were sections on taxonomy, on microbial cytology, on the chemistry of micro-organisms, on bacterial metabolism with Paul Fildes and Ernest Chain as co-presidents, one on the biological behaviour of micro-organisms under Sir Aldo Castellani, on genetics, on virulence and toxins under Ramon, on microbiological technique, on immunology, on viruses with A. J. Rhodes of Toronto as president, on rabies, on plant viruses, on bacteriophages, on the Rickettsiae under Mooser himself who is immortalised (with a fame which does not extend beyond the narrow confines of microbiology, but it is an immortality none the less) in the name of Rickettsia mooseri, on Schizomycetes, on the Enterobacteriaceae with Kaufmann of Copenhagen as president, on the Mycobacteriae with Petraggiani of Catania, on fungi, on protozoa, on arthropod vectors of disease, on microbiology applied to veterinary pathology and to agriculture and a number of other sections, twentytwo in all. When one considers that many of these sections are meeting at the same time, if one's interests happen to be wide then a certain physical nimbleness is necessary to move from one building to the other to be present as the papers in which one is interested are being read. There was in very truth an embarrassment of riches. Fortunately members are provided with a detailed programme and one has to plan one's movements overnight, being, as the gift of ubiquity is denied us, rigidly selective.

The Congress met for seven hours a day for five working days, excluding the opening plenary meeting. Often the members' enthusiasm (and believe me many of these scientists so biased, where other matters are concerned, are infectiously enthusiastic about their own subjects) prompted them to meet even beyond these hours and once lectures were held after dinner, from half past eight till after ten. The technicalities of reading papers and delivering addresses were very important. Firstly there were the difficulties inherent in languages. Fortunately nearly seventy-five per cent of the papers were read in English as British and American members constituted a very considerable proportion of the members and many others, such as Scandinavians, Japanese etc. obligingly chose our language for their papers. But only too often, alas, even here there were difficulties of pronunciation and of delivery which greatly hampered intelligibility. Such difficulties could be avoided. A teacher of stagecraft once pointed out that an actor's first duty is that he should be seen, that he should be heard and that he should be understood. My experience in this congress prompts me to emphasise the importance that everybody who speaks in public (and this includes university lecturers) should speak in a voice which by its clarity and volume is easily listened to. Unlike actors we need not be seen. We are seen, in fact, but that is just an unavoidable misfortune; we have no excuse if we are not understood. Many of the speakers in English in Rome, including some whose native language it was, were not heard and not understood. Doubtless all these orators' bacteriological abilities were superior to their powers as speakers in public.

Some members spoke in French, German, Italian, Spanish and Russian. In

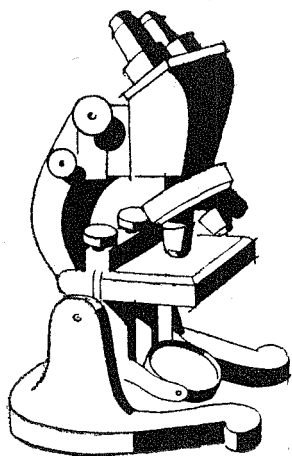
some congresses nowadays there is a system by which translations are relayed simultaneously to members through headphones, but this was not practicable in a congress of the size of this one. So interpreters translated. The standard of interpretership varied. It is never easy to take notes and translate complex technicalities and the whole business is certainly time-consuming. One very efficient lady did her work excellently but so complex did it become that at times, she rose to give English translations of a speech which had been already delivered in English, not having, so to say, changed over in her mind from the original. One lesson I learned at the Congress was the usefulness of knowing some French. I don't think one can spend idle summer hours better than in learning a fourth or a fifth language and even a smattering of French will be found of unexpected usefulness in a variety of circumstances.

It is a fair question to ask what was said at the Congress that was new, but a very difficult one to answer. The printed summaries of papers read run to nearly sixteen hundred pages and when one realises these summaries are but brief synopses the volume of material dealt with can be visualised. Time alone can sift the grain from the chaff. Who, at the 1936 congress would have picked on Fleming's paper as the most important of all? The only guidance must be personal preference. I have always been specially interested in virus work and along this line following the adoption of new techniques, such as culture on the various parts of the developing egg, and of tissue culture, great progress has been made. I was particularly interested to hear definite evidence by Dorothy Horstmann and Robert McCollum on the presence of a viraemic phase in poliomyelitis, the virus being present in the blood before the antiviral bodies and before the

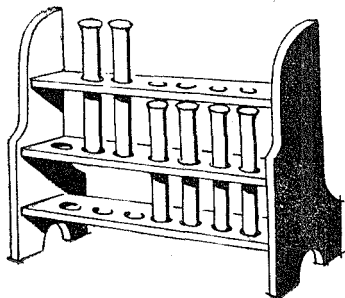
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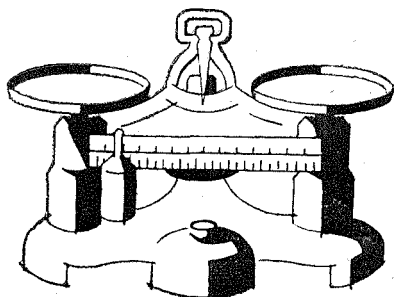
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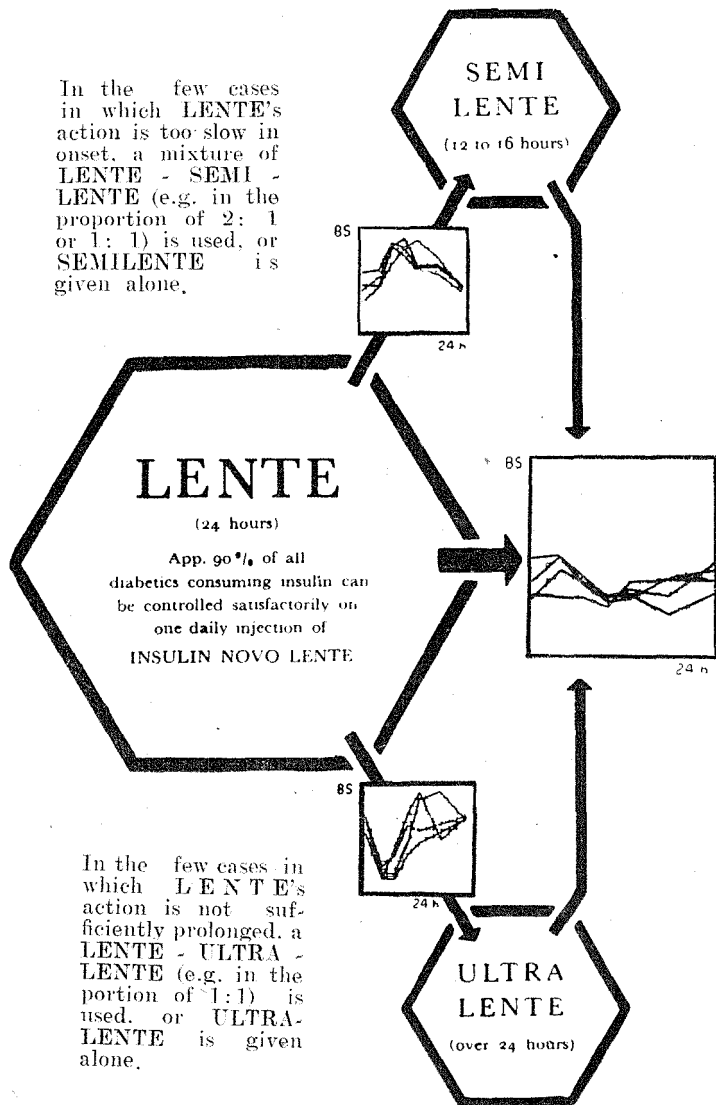
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paralytic signs appear. The most instructive meetings may often be the informal ones and such a one, on the possibilities of specific prophylactic measures against poliomyelitis was held under the genial chairmanship of Dr. A. B. Sabin of Cincinnati. The unsatisfactory conclusion seems to have been reached that the usefulness of gamma globulin is extremely limited, and that most of the gossip about progress in this direction is just gossip of the idle sort.

One problem I always find fascinating is that of the microbial origin of new growths. There were times when the evidence for this theory was scanty indeed, but somehow it was a theory which refused to be dismissed. Now, with the usefulness of the electron microscope extending daily, strange things are being seen. Mulè, for one, showed interesting pictures of what were claimed to be viruses cultivated from the blood of cases of myeloid and lymphatic leukaemia, of epitheliomata etc. Of similar interest was a paper read by Eleanor Alexander-Jackson of the Cancer Research Laboratory of the Presbyterian Hospital, Newark, New Jersey describing a specific micro-organism isolated from the blood and tumours of every one of hundreds of cancer patients and animals. It is stained by a Ziehl-Neelsen method and has been cultivated, but unfortunately it has highly pleomorphic developmental and growth pattern. These workers (for Dr. Alexander-Jackson is one of a team) impressed me by the earnestness of their convictions and the vast amount of work which they appear to have carried out in their research. Whether one is convinced or not, it would be foolish to belittle this work just because it may appear unorthodox. Dr. Alexander Neuwirth, of Connecticut, goes even further. He claims that antisera can be developed

in calves and sheep inoculated with new growth filtrates and he described eight cases of new growths which were successfully treated by these sera. Under cross examination it became clearer that surgery was also used, but the main therapy had been an antiserum one.

Discussions generally follow the reading of a paper. Generally these are very illuminating eliciting confirmation of important points. Dr. Neuwirth quoted above, was asked whether he had run a control series of patients injected with normal serum. He was able to reply that he had done so on monkeys. Sometimes the debate gets heated although it is very rare for it to become anything but friendly. Still it must be realised that sometimes a paper read at a Congress represents the culmination of years of hard work and impertinent criticism is not very welcome. One paper dealing with an alleged influence of suggestion (or hypnotic influence) on bacteria affecting their rate of growth had a derisive audience which sneered openly and remained unconvinced. As a rule, however, it is a pleasure to hear and see the calm academic manner in which things are debated, to see four or five scientists, may be from different continents, who have for years been reading each others' papers but had never before met coming together and talking over their work. Just as passing through a Sunday afternoon crowd in our suburbs one hears nothing but snatches of football talk, so here one hears talk about new *Penicillia*, new *Rickettsiae*, strange phases of microbial life, the complex biochemical lives of viruses and phages. In the tree-filled spaces and in the peaceful lawns of the University City in Rome it was the groves of Academe again in a new form, the Platonic symposia brought up to date.

The "stars" of the Rome Congress

were, I would say, four: Puntoni, the president and our chief host, ubiquitous from before the congress had opened till it closed, a president who did not regard his duties as merely honorary but who was solicitous for the welfare of his guests. He did everything, from delivering weighty addresses to distributing memorial medals after congressists had been received in audience by His Holiness the Pope. Sir Alexander Fleming was there with his charming young wife, a very popular figure with all, generously signing photographs and chatting with his friends and acquaintances from all over the world. Selman Waksman, the 1952 winner of the Nobel prize for medicine, was perhaps the most famous of the representatives of America. And, tireless and charming, eloquent in many tongues, with flashing eyes and an ever-present smile Ernest Chain met his guests in the university and in the beautiful gardens of the Istituto Superiore di Sanità. Wherever one looked somehow there seemed to be Chain, with a mane of hair such as normally only maestros have the courage to wear, explaining a point, showing some new beauty in the landscape, welcoming the coming and speeding the parting guest. The man even actually looks a genius, but few who did not know his work would suspect the depth and extent of his learning.

Every Congress has a number of social functions. This one took one whole day off and every member was taken to stroll through the remains of Hadrian's villa, miles outside Rome, and to enjoy the fantastic beauty of

the gardens of the Villa d'Este at Tivoli, renowned for the variety and number of its fountains. There was even a cold lunch which the collected bacteriologists of the world devoured with a zest which no bacteriophage could have rivalled. A reception at the Capitol was a revelation of the stateliness of this ancient building, its richness in artistic treasures, and the good taste of the hosts not only in having splendid fountains playing in cool gardens at night but in floodlighting them very effectively. Finally there was a banquet, which ended in an elegantly organised ball. And, even in these frivolous moments one still makes friends, meets people whose names he had long heard and finds how often their kindness is as great as the splendour of their work.

My abiding memories of Rome in 1953 will be of talks with such fine persons as Nobel Klieneberger and Joyce Wright, and of the poliomyelitis discussions between great teachers, who reminded me of those Bellocian

regal Dons

With hearts of gold and lungs of bronze,
Who shout and bang and roar and bawl
The Absolute across the hall;

Also of the hospitality of a chance acquaintance met in the Tivoli gardens, a Virginian botanist with an enthusiasm for the French language; of old friendships renewed and new ones made; of the sensation of watching the towers of learning being built; and of my unquenchable desire that somehow, sometime, I might be given the grace to add a brick to the wonderful edifice.

Dental Foci of Infection

DR. J.J. MANGION B.Sc., M.D., F.D.S. (Eng.)

Historical

The concept of the haematogenous transportation of bacteria or toxic products from septic dental foci causing the occurrence of pathologic lesions in other parts of the body is largely due to William Hunter, who aroused great interest among both the medical and dental professions with his inauguration lecture at McGill University in Montreal, published in the "Lancet" (1911). He indicted the poor type of conservative dentistry as being the cause of rheumatic and other chronic diseases such as anaemia, gastritis, colitis, fevers of unknown origin, diseases of the kidneys and others.

It would not, however, be entirely fair to attribute the origin of the theory of focal sepsis to Hunter; other writers had previously drawn the attention of medical practitioners to the ill effects of septic teeth on the general health, though it appears that their convictions found no favourable acceptance. Rush (1818) mentioned various cases illustrating the relation between dental infection and certain evil consequences in the general system; he described the disappearance of rheumatic pain in the hip following the extraction of an aching tooth. Koecker (1828) in his book "Dental Surgery" stated that "one can always assume"... in rheumatic diseases "that the teeth play a principal role if they are not in good condition". A case of rheumatic fever cured after the extraction of a tooth had not escaped the notice of Hippocrates.

Closely linked with the idea of metastatic infections from dental foci is Rosenow, whose experiments have stimulated many research workers to

study this subject further. By injecting into animals bacterial cultures from the peridental tissues of patients with chronic arthritis, rheumatic fever with endocarditis, peptic ulcer, cholecystitis etc. he described the production of similar lesions in the injected animal; and for this mode of infection in which organisms are conveyed to a tissue for which they have affinity he introduced the term "elective localisation". Of the early investigators outstanding on the dental side were Weston Price and Thomas Hartzell, on the medical side Billings, Mayo and others. The idea spread widely and the name of research workers is legion.

In the twenties there was an unusual emphasis on this aspect of medicine, which resulted in the adoption of extremely radical measures, ruthlessly sacrificing useful teeth with frequent disregard to less obvious foci of infection. The radical element of the profession, who rendered their patients edentulous whenever they did not care to discover other causes for systemic disturbances, brought the theory into disrepute. Teeth were extracted in a routine fashion without any such indication. It appears that no sound criterion was followed to evaluate which teeth were acting as foci of infection; as it still often the case, the physician's knowledge of dentistry was very limited and the natural repulsion towards dirty, stained crowns of teeth may possibly have been the sole reason for which the wholesale destruction of the masticatory organ used to be advised. Another cause of disappointment was the failure of a cure in those cases where secondary foci had already established themselves with irreparable damage.

Bacterial Dissemination.

The circulatory invasion of oral bacteria following the extraction of teeth, septic or not, has been definitely established by the experiments of Okell and Elliot (1935), while Round, Kirkpatrick et alia have also produced temporary bacteraemia in patients with unhealthy paradental tissues by making them chew on hard food. In plain terms, patients with septic peridental pockets have their bloodstream invaded with bacteria as often as they eat. The question arises, therefore, whether these circulating micro-organisms can be regarded as completely innocuous. Another question as well would require to be settled, whether the absorption of bacterial metabolites, the proteolytic ferments elaborated by the leucocytes and the tissue break-down products can be considered entirely harmless.

The role of stomatogenic sepsis in the causation of infective endocarditis has been accepted and proved beyond doubt. It is thus a matter of routine for the physician to take the necessary precautionary measures in connection with the extraction of teeth in patients with valvular lesions. On the other hand, the physician who invariably advises his rheumatic patient to refrain at all times from having a tooth extracted is certainly not pursuing a counsel of perfection. As long as the septic tooth is left in the mouth it is a continuous menace, as every act of hard mastication pumps bacteria into the circulation, though admittedly not to the extent caused by the extraction. Protecting his patients with antibiotics and relative rest, the dental surgeon should cause the absolute minimum of trauma during extraction and should observe scrupulous aseptic measures.

In normal individuals the occasional dissemination of bacteria into the cir-

ulation is adequately dealt with by the reticulo endothelial system. Still it is questionable whether the continuous effort to eliminate bacteria may not strain the defensive mechanism or weaken its resistance. At the same time one should not lose sight of the fact that death of the micro-organisms is only one stage in the elimination of the noxious material; the products of bacterial dissolution are protein in nature and as such they are capable of setting up anaphylactoid phenomena.

Closed Sepsis.

It has already been pointed out that besides providing the bacteria, a septic focus continuously furnishes a supply of intoxicating material which is absorbed into the lymph and blood vessels. Considered from this point of view a focus of infection is appropriately called a "focus of intoxication". The intoxicating agents include the end products of bacterial metabolism and the tissue breakdown products which belong to the group of H-substances. It is quite within scientific reasoning that these circulating foreign protein substances act as antigens stimulating the production of antibodies, and the simultaneous presence of both may give rise to allergic phenomena. As anaphylaxis is of a rather complex nature and its occurrence involves multiple causative factors, it is conceivable that a particular patient may become sensitised to the various bacterial metabolites and tissue breakdown products where a normal individual would not; or, that the protein absorption products may provide the missing link in the setting up of anaphylactic reaction.

It is significant that joint pains and effusion into joints are among the symptoms of allergic reactions. It may not have been proved how the circulating noxious matter elects to become fixed in the cartilage matrix of a joint,

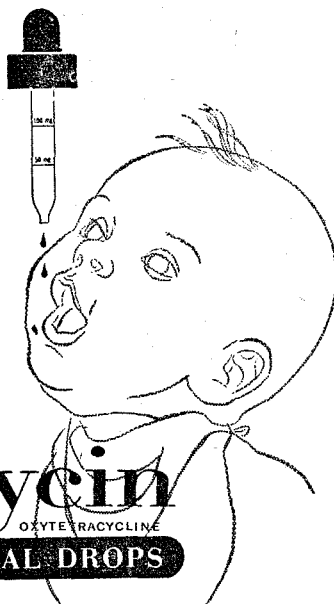
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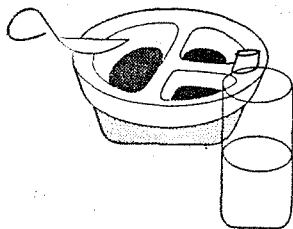
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but, Fish has alluded to the similarity of this phenomenon to the fixation of uric acid from the blood on to the joints of gouty patients. On the other hand one cannot expect to cure rheumatoid arthritis by the extraction of teeth once the joint lesion has established itself. The treatment of certain diseases lies mainly in their prevention.

Until the subject has been more clearly elucidated a conservative view is rightly justified, but one's contention is that focal sepsis provides an additional load on the general resistance, impairing the defensive powers and contributing to the degenerative changes of various organs, circulatory or excretory, overworking those with detoxicating function. It is a common clinical experience of the practising dental surgeon that the patient who has had his teeth extracted on account of advanced paradental disease experiences an unusual sense of well-being and fresh vitality. It has been frequently noticed that the diabetic patient benefits appreciably in this respect; every type of infection aggravates the diabetic ailments and the elimination of dental sepsis relieves the strain on the internal secretory system of the pancreas. In degenerative diseases of the kidneys the elimination of foci of intoxication is appropriately indicated as an essential part of the treatment, and the patient is all the better for the loss of his teeth. The view that the degeneration of the vascular system is aggravated by circulating toxic products is still tenable. If this concept is correct, prophylaxis early in the course of the disease should be foremost in the line of treatment. It cannot be overemphasised that treatment should be instituted as early as possible; and the early elimination of foci does not necessarily entail the loss of teeth.

Open Sepsis.

Superficial septic mouth lesions, such as pyorrhoeic pockets, which drain into the oral cavity may form foci from which sepsis is spread to situations in direct communication with the mouth. Septic material trickles down the pharynx, smearing the tonsils and the pharyngeal opening of the Eustachian tube. It is assumed that swallowed mouth bacteria are destroyed in the stomach and exert no further harmful effect on the rest of the gut though Hunter expressed his doubt whether the continuous swallowing of pus organisms is tolerated indefinitely by the stomach mucosa.

Pus discharged from gingival pockets or through fistulae draining apical infections reaching the pharynx may be inhaled into the lungs. In chronic laryngeal inflammations, one has noticed occasional clinical response to the elimination of dental foci. Proske and Sayers placed great emphasis on diseases of the teeth and gums as the cause of the putrid bronchial and pulmonary diseases occurring in silicosis, fuso-spirochaetal organisms becoming an important factor if the way is prepared by the rock particles. In patients who sleep with their mouth open and snore, bacteria, enveloped in moisture globules may be aspirated into the bronchi; and though these micro-organisms may be relatively avirulent to the healthy lung, they may not be harmless in association with chronic inflammatory diseases. The possibility that infected material in the pharynx may find its way into the lungs is not unrealistic considering that oil from nasal drops may reach the bronchi. In such manner the asthmatic patient may inhale a continuous supply of allergen, and his feather pillow or his pet may be blamed unnecessarily. It appears that this source of supply of additional infective material in chronic diseases

of the bronchi is not sufficiently appreciated.

There has certainly been an overstatement of the role of oral sepsis in general diseases, and from the days when the idea was accepted with uncritical enthusiasm the pendulum has swung a little too far the other way. Owing to the many difficulties encountered in establishing the evidence of

casual relationship between the primary focus and the metastatic lesion a sense of frustration, often amounting to stark scepticism, has crept in. It is, however one's contention that the original theory has not been thoroughly investigated, that the concept of focal sepsis is a biologic possibility, and that oral prophylaxis contributes materially to the prevention of a multitude of ailments.

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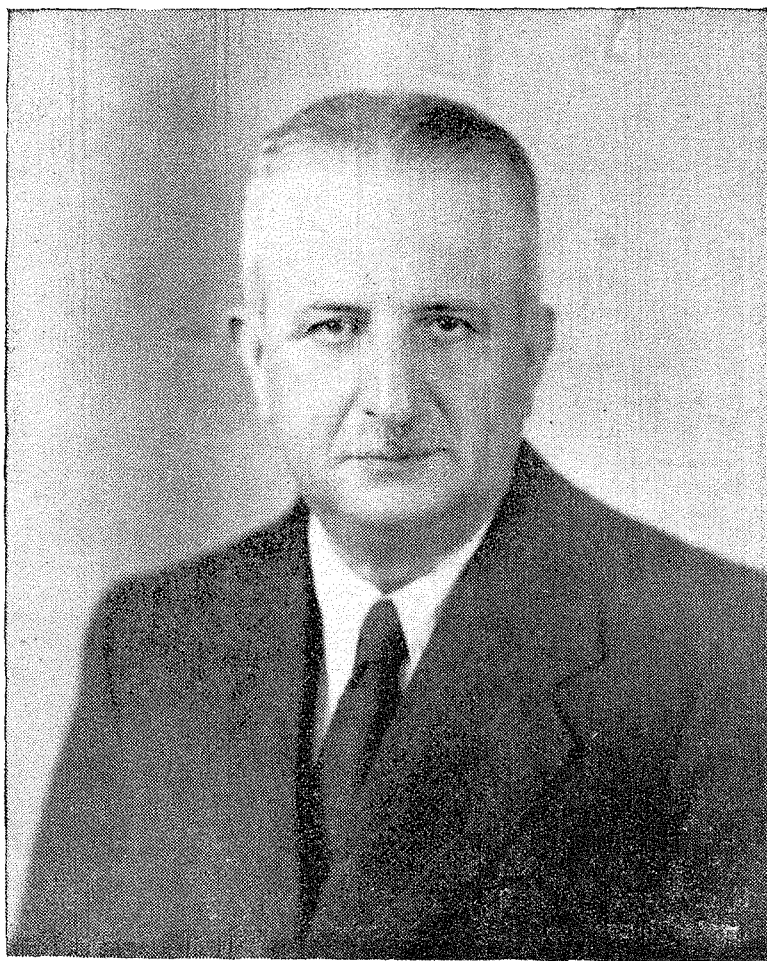
Prof. J. Hyzler

Dr. J. Paris writes:

Dr. Jos. Hyzler B.Sc., M.D., emeritus professor Royal University of Malta, aged 67, died at Valletta on the 24th. October 1953 after a short, inexorable illness. A leading and highly esteemed member of the Maltese Medical Community, Prof. Hyzler was not less

heart and intellect were impressive. In 1909, he secured the B. Sc.; and in August 1913, he graduated M.D. at the Royal University.

He started his professional career as resident medical officer attached to the surgical wards at the Central Civil Hospital, Floriana. From 1917 to 1923 he held the billet of clinical assistant to the



honourably known for his political and patriotic activities. Since the days of his studentship, his superior qualities of

Professor of Surgery. In the meantime he proceeded to Italy where he followed postgraduate courses at Naples and at Rome, specialising in Otorhinolaryngology, a branch of science practically unknown in Malta at that time. In 1926 he was appointed Professor of Forensic

The Hon. Dr. J. Paris, Minister of Education, was a colleague of Prof. J. Hyzler and one of his closest friends.

Medicine at the Royal University of Malta, an office which he had to relinquish in 1946 on reaching the age limit of 60. That Chair he honoured by his deep learning and his exceptionally high qualities as a master. His clear, practical and illuminating lectures will for many years to come remain vivid in the minds of his students, who will also remember him as a fatherly examiner in Anatomy, Surgery, Semiotics and Mental Diseases. In 1927, Prof. Hyzler represented the Island at the International Congress of Forensic Medicine at Florence. His exceptional ability in Forensic Medicine was proved by his authoritative opinions in medico-legal disputes of high responsibility occurring in both the Civil and Criminal Halls of the Law Courts. In fact he was the officially recognised expert in such cases. The Legal Profession has missed in him an able upright and most conscientious referee.

His uncommon professional qualities were recognised by the Government by appointing him a member on such varied Boards as the Medical Board, the Leprosy Board, the Council of Health and the Mental Board. Prof. Hyzler has also served as Prison Visitor and as Commissioner of Charity.

Parallel with his professional success, goes his career as a politician. In this field his activity started as early as 1919-1920 when the First National Assembly leading to the 1921 constitu-

tion was formed. At that time he had joined the ranks of the "Unione Politica Maltese". In 1932, he was elected a member of the Legislative Assembly in the interests of the Nationalist Party.

In 1945, Prof. Hyzler was nominated a member of the Executive Government Council.

Prof. Hyzler worked hard in the various sub-committees on which he was appointed by the National Assembly which was formed for the purpose of drafting the New Constitution of 1947. In that Assembly, he represented the Camera Medica, the historic institution so dear to his heart and of which he was the President until his death.

In the Electoral campaign which followed in 1947, Prof. Hyzler was returned to the Legislative Assembly as leader of the Group of the Democratic Action Party. In the Assembly, he was chosen member in various select committees of the House. His contributions to the Press on parliamentary procedure carried weight and were most instructive.

Both as a professional and as a politician, Prof. Hyzler was held in high esteem by the whole Maltese population as was shown by the highly representative cortege of friends and admirers from all walks of life, who gathered at the Addolorata Cemetery on the 26th. October 1953, the day of his funeral to pay their last tribute to so much respected and beloved fellow citizen.

CONTRIBUTION

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"
83 Rudolf Street,
Sliema.

Abstracts from "Il Giornale Italiano di Oftalmia"

By Dr. T. Tabone M.D., D.O. (Oxon.) D.O.M.S. (Lond.), F.R.C.S., (Edin).

1. Bottoni A. Considerations on the therapy of diabetic retinopathy. *Giorn. ital. oftal.* 4/332-334, July-August 1953.

The literature on the treatment of diabetic retinopathy, is reviewed, and an outline of the pathology of the condition given. One hundred and fifteen cases were treated with (a) lipotropic factor of the pancreas (19 cases), (b) methionia and cholin (10 cases), (c) substances capable of releasing the methyl radicle, and which protect the liver (4 cases), (d) Vitamin B. (20 cases), (e) Rutin (35 cases), (f) Vitamin P. (7 cases), (g) Vitamin E. (10 cases), (h) testosterone (10 cases).

Of this total, only 9 (7.8%) showed some improvement; the amount of exudate diminished, while it disappeared is only one case. Vascular changes and haemorrhages remained unaltered. 15 cases (13.1%), became worse during all the period of observation (28 months); of these, 5 had been treated exclusively with rutin. This drug was found to give the least response, while those substances with a lipolytic action gave the most favourable results. The author concludes, that while there is no specific remedy for the condition the means at our disposal, including insulin, should nevertheless be used to prevent further damage to the retina. The above named substances, while incapable of influencing in the majority of cases the already established retinopathy, may prevent its onset if given prophylactically.

2. Simonelli M., Faldi S. Better view of retinal tears after intra-venous injection of fluorescein and Geigy blue.

Giorn. ital. oftal. 4/322-329, July-August 1953.

Using the technique suggested by Offret and Decaudin (intra-venous injection of 2 c.c. sodium fluorescein 10% solution) the authors have used this method on 50 cases of retinal detachment and they have compared the visibility of tears, before and after the injection. More than half of the cases showed better visibility of tears after the injection, while in 20 cases, in which the retina had become replaced after rest in bed, there was no appreciable difference in visibility. In 12 cases treated with intra-venous injection of a 1/2% solution of Geigy blue, the results were very similar to those obtained after fluorescein injection. The better visibility was the result of greater contrast of the margins of the hole (which assumed a pale green colour), and the base of the tear. The possible mechanisms for this increased contrast are discussed, and the view is expressed, that great weight should be attached to the staining of the sub-retinal fluid, by the drugs injected.

3. Ltta. B, Pina G. The appearance of penicillin-resistant strains of staphylococci, after local treatment with penicillin ointment. *Giorn. ital. oftal.* 4/343-358. July August 1953.

The authors give a most interesting review of the works on drugs resistance of germs, with particular emphasis of the resistance of staphylococci to penicillin, and a long and comprehensive bibliography on the subject.

In a preliminary approach to the problem, they have isolated 85 different

strains of staphs from the conjunctive of trachomatous children, who had been subjected to local penicillin therapy for long periods, but who had treatment suspended for about a week. 45 strains (52.9%) showed resistance to the drug. Germs were grown on either blood agar, or Bacto-Chapman Stone medium, and the pathogenicity of the germs, was based on their capability of coagulating human citrated blood.

In a second experiment, they have examined 180 different strains from both the conjunctival and nasal mucosa. While before treatment with local penicillin, only 2.5% of the said strains were penicillin resistant, two weeks after cessation of treatment, 62.% of the strains from the conjunctival sac were found drug resistant, while there was no increase in the resistance in the case of strains obtained from the nasal mucous membrane.

They dwell on the significance, both clinical and epidemiological of this and allied phenomena.

4. Dorello U. Glutathione in the lens—Effect of formalin stress. *Giorn. ital. oftal.* 4/330-331. July-August 1953.

Previous work by the author had shown that injection of ACTH and DCA in the rabbit, produced decrease of glutathione in the lens, and he had suggested that might have been due to a phenomenon of stress.

He now reports on experiments conducted on six rabbits subjected to subcutaneous injection of formalin (1 in 100), while six others served as controls. He found no difference in glutathione in the treated animals and the controls and as formalin, is a well known 'stress' producing agent, he tended to conclude, that stress had no effect on glutathione in the lens.

—oOo—

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

"The British Medical Journal".

"The Practitioner".

"The British Medical Students' Journal".

"Melita Theologica".

The History, Methods, Rules and Clinical Applications of Percussion

By "Two students"

Percussion is one of the four clinical means of examination to which a doctor has to resort at the bedside, the others being inspection, palpation and auscultation. Whilst it is relatively unimportant in the examination of the abdomen, it is more important when examining the heart, although even here one cannot be too sure of the deductions arrived at. Whilst in examining the respiratory system, percussion is one of the most important, if not the most important, method of examination.

The importance and practicability of percussion as a method of clinical diagnosis was first discovered by Leopold Auenbrugger (1722-1809), a Viennese physician and son of an inn-keeper. In trying to determine the amount of wine which his father's barrels contained, Auenbrugger used to percuss the tops of the barrels, noting that the sound varied from dullness to tympanic as the barrels from full became empty. He applied these principles in examining patients' chests, and in 1761 he published a 97-page book with the title "*Inventum Novum Ex Percussione Thoracis Humani*". In its preface he wrote "I here present the reader with a new sign which I have discovered for detecting diseases of the chest. This consists in the percussion of the human thorax whereby according to the character of the particular sound elicited, an opinion is formed of the internal state..... In making public my discoveries, I have not been unconscious of the dangers I must encounter, since it has always been the fate of those who have illustrated or improved the arts and sciences by their discoveries, to be beset by envy, malice, hatred,

destruction and calumny." Brilliant though he was in his discovery of percussion Auenbrugger was wrong in his prediction of the discovery as it did not impress the medical world, and was treated with indifference, and nearly forgotten.

In the early 19th Century, Corvisart, a French physician, discovered this book and at once saw the potentialities of such a method as a means of diagnosis. He translated the book, amplified it nearly to 400 pages by his own observations, but very gallantly gave all the praise to Auenbrugger. Poirry, another French physician, also took up the method, and was another great influence in introducing percussion to the medical world.

Once percussion took root and became the physician's stand-by, certain constant peculiarities of resonance, hyper-resonance and dullness over or around the diseased area were noted by physicians and were afterwards known by their name. For instance, it was Skoda who found out that over a liquid level the lung is hyper-resonant and afterwards this hyper resonance became known as Skodaic resonance. Kronig's Isthmus is another example of this.

Percussion as we know it today is not very different from the original method. Direct percussion was first practised and this consisted of the chest wall being struck directly with the fingertip of one hand or with a percussion hammer. This method is unsatisfactory for many reasons and has generally been discarded. It is applied only when percussing the clavicle, when the examiner taps lightly over the most prominent part of the clavicle, making

sure that the points examined correspond exactly with each other.

Nowadays, indirect percussion is used. The fingers of one hand are placed flat on the place to be percussed and one of them is struck smartly with the tip of the finger of the other hand. The chief advantage of this is that not only can the percussion sound be appreciated by the ear, but also the percussion vibration can be felt by the fingers on the chest wall. This tactile perception can, with practice and experience, become so highly sensitive, to the extent that percussion can be practised even if the doctor is stone deaf. So much so, that in light percussion, tactile appreciation is at least as important as aural. It should always be the aim to keep percussion as light as possible. Heavy percussion causes large areas of lung to resonate and so small patches of impaired resonance is overlooked.

When percussing it is essential that the "anvil" finger be placed fully extended and flat against the part to be percussed. It should also be adapted to any irregularities of surface, so that no air space is interposed between it and the skin. The "hammer" finger must strike it perpendicular just proximal to the base of the nail. As soon as the blow has been given, the "hammer" should "bounce" off the "anvil", lest it should impair the vibration it has excited. Percussion should be a wrist, not an arm or a finger movement, and the wrist joint must move loosely. The middle finger of each hand is mostly used as both hammer and anvil, and in percussing the lungs, one must, as far as possible, percuss in the intercostal spaces, in order to obtain maximum resonance. This is not always possible in obese or muscular patients as the spaces may be difficult to find.

There are three major rules to be remembered when percussing:—

- (i) In percussing the boundaries of any organ, one must percuss from a resonant to a less resonant place.
- (ii) The longer axis of the pleximeter finger should always be parallel to the edge of the organ percussed.
- (iii) The pleximeter finger should always be kept in firm contact with the chest wall.

The character of the sound elicited varies with the strength of the blow and with the capacity of the part to resound the blow. The principle sounds heard are:—

- (i) *Tympanitic* — when the air in the cavity is of sufficient size to be sent into vibration, and is not modified by excessive tension of the wall of the wall of the organ. This is commonly heard over the stomach.
- (ii) A *Resonant* note is heard when the air-containing organ is divided into small loculi. This is heard over healthy lung tissue.
- (iii) *Dullness* on percussion is always heard over solid organs such as the liver, spleen, etc.

As the full treatment of the subject on percussion. The dullness shifts abdomen would take pages and pages, it is quite out of the scope of a short essay, and therefore it will here be treated in brief.

Percussion of the Abdomen is, except in very few circumstances, a somewhat unrewarding procedure. Care should be taken that percussion be light and so the stroke should not be too heavy. The note elicited should be tympanitic throughout except over the regions of the splenic and liver dullness, and over a distended bladder. Enlargement of these organs can be confirmed by percussion. Absence of liver dullness denotes air or gas in the

peritoneum, which is a sign of perforation of a viscus, usually a perforated duodenal or gastric ulcer.

Free fluid in ascites gives a dull note on percussion. The dullness shifts with the position of the liquid as the patient changes his position from side to side. This is called *shifting dullness* and can be elicited when the patient is rolled from one side to another, always giving time for the intestine to float on to the surface before percussing, the dullness always being elicited on the lower flank, the upper flank being resonant.

A *fluid thrill* may also be palpable in ascites. This is elicited by placing one hand flat on one side of the abdomen, and the other side is flicked rapidly by the other hand. A distinct impact is felt to pass from one hand to the other. To counteract the presence of fat which simulates the fluid thrill through the abdominal wall, an assistant should place the ulnar side of his hand firmly on the middle line of the abdomen whilst percussion is being made.

Percussion of the Heart provides little information which can only be ascertained by X-rays, as percussion alone might give fallacious results.

The heart produces a dull note on percussion, and therefore, cardiac enlargement can theoretically be noted, as also pericardial effusions and aortic aneurisms. Also, absence of cardiac dullness over the usual area of total cardiac dullness generally denotes hypertrophic emphysema.

In percussing the heart, one must first percuss the sternum over the angle of Louis, to detect any aortic aneurism, which in that case can be mapped out as a dull area over the heart. Then the aorta and pulmonary trunk should be examined for hypertrophy. This is done by percussing lightly over the second and third interspaces just to the right and left of the sternum res-

pectively. The percussion stroke should be light and the pleximeter finger should be struck on the distal phalanx and not on the middle phalanx, as is usual. Dullness here denotes hypertrophy. Enlargement of the right ventricle to the right can be noted by percussing midway on the line joining the apex beat and the liver dullness. This spot is normally resonant and is dull when the right ventricle is hypertrophied. The left cardiac border can rarely be found accurately, but can approximately be found by percussing rapidly and lightly across the left breast, starting from near the shoulder towards the heart with the pleximeter finger parallel to the edge of the heart. In order not to prejudice the aural note, one must look away whilst percussing.

As stated before, everything discovered by percussion is relative and has to be ascertained by X-rays.

Percussion of the Lungs is an important part in the examination of the chest, and many important conclusions can be drawn from it.

The normal degree of resonance varies from individual to individual and in different parts of the chest. It is most resonant below the clavicle and beneath the scapula where muscles are thin, and resonance is least over the scapulae.

Beginning in front, the examiner should tap lightly over each clavicle, observing the sound and comparing the sound on one clavicle to that on the other. Thereafter, the areas on either side should be compared, many points being systematically percussed over each area.

After the front has been examined the axillary and infra-axillary areas should be percussed with the patient holding his hands joined above his head, and lastly the various areas posteriorly should be systematically work-

ed out.

The normal degree of resonance by lung tissue is resonant but in certain conditions the note varies with the lung or pleura underneath. *Resonance is increased* when the pleural cavity contains air, as in pneumothorax. Large cavities also elicit a hyper resonant or tympanitic note under certain conditions, but many cavities do not do so.

Resonance is also increased in most cases of emphysema, but the character and pitch of the note obtained may be so altered, due to the rigidity of the chest wall, that sometimes the sound is suggestive of dullness.

Skodaic resonance is heard above the level of pleural effusion or in the upper portion of the lung whose lower lobe is affected by consolidation.

Resonance is diminished when the pleura is thickened, when the lung is, for some reason or other, more solid than usual, or when the pleural cavity contains fluid. In fibrosis and infiltration by Tuberculous bacilli in the lung, the part affected is not aerated as well as usual, and therefore there is a slight impairment of resonance.

Over a lung abscess, neoplasm, fibrosis or collapse, the note is distinctly dull, whilst an absolutely dull note is elicited over completely consolidated lobes in pneumonia. On any pleural effusion of any size, the tactile appreciation of "stony dullness" is very characteristic, whilst in heart failure, dullness or impaired resonance can be found at the bases indicated in oedema or bilateral effusion of both bases.

CONGRATULATIONS

We congratulate the following doctors who have recently got married and we wish these newly-weds happiness and success.

Dr. W. Cuschieri M.D., D.A. and Miss D. Pizzuto.

Dr. H. Harding M.D., D.R.C.O.G. and Miss L. Stilon

Dr. R. Eminjan M.D., D.R.C.O.G. and Miss G. Galea.

Captain E. Aquilina B.Sc., M.D. and Dr. Aurora Abela, B.Sc., M.D.

Dr. J. Rizzo B.Sc., M.D., and Miss L. Pace.

Dr. M. Sant Cassar M.D. and Miss M. Boffa.

Dr. J. Cremona M.D. and Miss M. Micallef.

Dr. Portelli M.D. and Miss M. Pillow.

Captain Briffa M.D. and Miss Agius

THE TIME HAS COME

WALRUS.

Since the Walrus last uttered there has been an improvement in the furnishing of the students quarters at St. Luke's Hospital. However there is still no reading room, no medical reference library and no sort of canteen service where students can have a cup of coffee in the mornings or at any other time.

The importance of a reading room is quite incomprehensible to some of the University staff. "The students should either be at lectures or in the wards". That is perhaps technically correct with the present time table. However it occasionally happens that some of the more literary students want to write up there case histories, or look up some rather rare disease. It has also reached the Walrus's ears (do they have ears?) that some misguided student who was idiot enough to have a sandwich lunch and stayed on for the afternoon's operations wanted to read his cases up. It is inevitable that there is and should be a considerable amount of time "between things" when a reading room is essential.

With a few notable exceptions the medical student is rather a thin and ravenous creature at the end of a long morning of various degrees of torture. A can-

teen service for students and the hospital staff is sorely missed. Why should they be forced, though threatened hypoglycaemia to bring messy sandwiches wrapped in still more messy paper with them. Almost every hospital abroad has some sort of arrangement whereby the students can get some meagre form of refreshment.

An example of lack of consideration for the wretched student is the arrangement about the Ophthalmology and Hygiene lectures which are at present held at Floriana. We hope that when the new lecture hall is ready they will be held in it and forty five students will not have to ask their chauffeurs to take them in their Rolls-Royce's to Floriana even when it does not rain.

The Walrus thinks that lecture rooms should be comfortable. A student should be able to listen or sleep without excessive pain. Chairs did arrive last term and of course have already begun to disappear so that at least one of our learned friends who thinks it very indecent to come to a lecture before the speaker has had a good quarter of an hour to warm up has to balance on the edge of a desk again.

However you must not think the Walrus is ungrateful. Oh, no! He thanks everybody for everything, but would like some oysters.

The Senate has granted the students' request re. the holding of examinations. The Semiotics, Skin and Obstetrics exams will be held in June 1954; but there will be no compensation between the Obstetrics exam and the Gynaecology exam which will be held in June 1955. The Hygiene exam will be held in December 1954.

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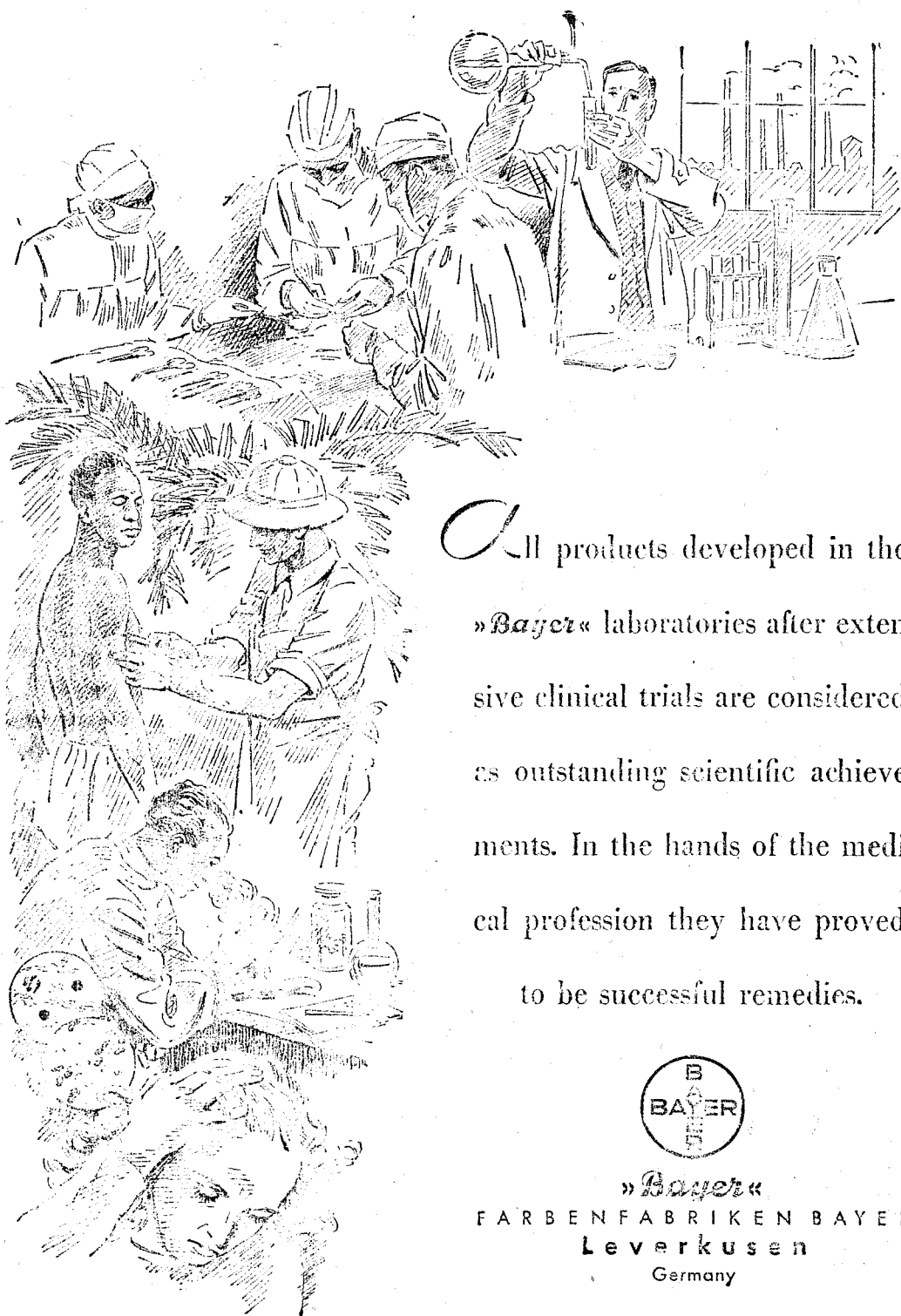
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