

States, and it was from there they got their name of sight-saving classes. Our law recognized only schools for the blind and partially blind; to have called them "partially-blind schools" would have been disastrous. Parents would have been shocked and hostile. So we called them "myopic classes." Most of the children were true myopes, but there was a percentage with scarred eyes from natal defects, from disease after birth, and from injuries. The name served well until we heard "sight-saving classes," and that became an attraction to the parents. In a paper read before the Section of Ophthalmology of the Royal Society of Medicine in 1913<sup>1</sup> I gave a full account of the work of these classes, and it included six pictures of the school work and equipment. As the number of children found to have defective sight—so defective that they were unfit for the normal school and too good for a blind school—increased with years it became difficult to link these classes with the normal school. So that this distinct benefit had to be given up. Schools for myopic children were established in appropriate regions.

#### Potentialities of Schools for Myopes

Now comes my attempt to answer the main part of the question in the leading article in the *Journal* already referred to. What are the "potentialities of the school for the partially blind"? To my mind the answer to that question is to be found in the records of the variation in the sight of boys and girls in the normal schools. I have given figures showing that the eyesight of girls was at least 10% worse than that of boys. This cannot be explained except by the differences in the lives and work of boys and girls in school years. If this difference be true for "normal" children, it must also be true for children of poor sight, especially for high myopes, whose eyes have an unnaturally soft sclerotic coat and a torn choroid about the optic disk. They have a short point of clear vision; this makes convergence excessive and so squeezes the eyeballs and increases the tendency to an elongation of the eyeball, and brings an increase of the myopia.

There is an ancient proverb: "Train up a child in the way he should go, and when he is old he will not depart from it." There can be no doubt that if we teach these partially sighted children how to use their eyes with intelligence they will carry on with the training that we give them after school years. It is difficult to obtain evidence of the effect of this training in school cases or even in hospital cases, for the years through which we see these persons are so few, but I have had ample evidence of the good reaction to training in private patients who have been seen over many years. At one time I was able to collect evidence from the histories of 480 myopes of more than 3D. Of these 183 were engaged in various occupations involving habitual close eye work—e.g., clerks, seamstresses, compositors, etc.—and 297 not so engaged. The comparison was summarized in a table I gave to the Government Committee<sup>2</sup>:

Type of Patient	Number	Breakdowns	Damage to Eyes	Total of Failures
Habitual close eye workers	183 (100%)	70 (38.2%)	27 (15%)	97 (53%)
Others .. .. .	297 (100%)	7 (2.4%)	21 (7.06%)	28 (9.4%)
Total percentage in 480	100	16	10	26

The higher total of the second section is accounted for by the number of married women among them, and it includes most of the very high myopes who were unable to do close work. Of the 53% of the close workers whose sight failed at some time of their career no less than 15% sustained permanent damage through loss of an eye. Two persons lost both eyes.

I have had three opportunities of ascertaining the reaction to these sight-saving classes in other and wide areas of the world. In 1930 I crossed Canada to the far west, and in 1935 crossed the United States of America to the Pacific, and in these journeys I saw many eye doctors; all were keen on this part of their work. Again, in 1932 there was a meeting of the Association Internationale de Prophylaxie de la Cécité in Paris. There I read a paper on "Sight-saving Classes,"<sup>3</sup> and the discussion with the ophthalmologists from all countries was most interesting. Those of certain countries on the continent of Europe regretted that the arrangements in the

normal schools were not elastic enough to allow a full development of these classes, but they said they were striving to get more of them established.

I therefore hope the sight-saving classes will continue to do their good work for the partially sighted children, for I feel sure that they will save many of our fellow citizens from the loss of their precious sight and from the misery of blindness.

#### REFERENCES

- <sup>1</sup> *The Conjunctiva in Health and Disease*, 1905, London.
- <sup>2</sup> "The Effects of School Life upon the Vision of the Child." *Proc. roy. Soc. Med. (Section of Diseases of Children)*, 1909, 2 206.
- <sup>3</sup> *Second International Congress on School Hygiene*, London, 1907, p. 794.
- <sup>4</sup> "The Education of High Myopes." *Proc. roy. Soc. Med. (Section of Ophthalmology)*, 1913, 6, 146.
- <sup>5</sup> Ministry of Health Departmental Committee on the Causes and Prevention of Blindness, 1922, London, p. 53.
- <sup>6</sup> *British Medical Journal*, 1933, 1, 129.

## NEW BRIDGE-HEADS FOR ATTACK ON CANCER EMPIRE CANCER CAMPAIGN REPORT

The twenty-first annual report of the British Empire Cancer Campaign, under the able editorship of Mr. J. P. Lockhart-Mummery, again embodies brief accounts of research work or clinical investigation from about forty hospitals, laboratories, research departments, branch councils, affiliated organizations over-seas, and individual workers. Thanks to the continuing support of the public, notwithstanding so many other claims, the Campaign has been able to allocate nearly £40,000 for research in 1945.

#### Carcinogenic Agents

Much work proceeded during the last year on the elucidation of the way in which carcinogenic agents act and on the discovery of fresh agents. Thus in the department of pathology, University of Sheffield, progress has been made in explaining the remarkable tumour-producing properties of the compound 2-acetyl aminofluorene. It is now thought probable that the tumours are due to interference with liver function. It has also been possible to localize the carcinogenic action of acetyl aminofluorene to sites not usually affected. Thus both benign and malignant tumours of the thyroid gland have been obtained by the combined action of acetyl aminofluorene and allyl-thiourea.

Several departments have been working on the special properties of benzpyrene. In the cancer research laboratory of the Royal Victoria Infirmary, Newcastle-upon-Tyne, epidermal tumours have been produced in mice by a single application of this substance if the skin has been treated afterwards with some agent, itself non-carcinogenic, which causes epithelial proliferation. The existence of a sensitizing factor in the genesis of tumours is suggested, and it is pointed out that if the same holds good for human pathology, hyperplasia may prove to be a factor of high importance in determining the occurrence of tumours in man.

Work carried out at the Sir William Dunn School of Pathology at Oxford makes it possible to define more closely the relationship between chronic irritation and the onset of cancer. There appears to be little danger of a simple irritant producing a tumour or even a pre-neoplastic lesion by itself, but if a pre-neoplastic lesion has developed, then the subsequent development of a tumour at that site may be facilitated by the action of a non-specific irritant.

An interesting experiment under the auspices of the Marie Curie Hospital indicates that a subline of a high-cancer-incidence strain of mice which had itself lost the power of developing mammary tumours spontaneously may nevertheless transmit this power through the milk factor to a low-cancer strain, showing that the loss of power in the substrain to develop mammary tumours is due not to the milk factor but to a mutation.

#### Advances in Chemotherapy

At the annual meeting of the Campaign a year ago Prof. E. C. Dodds mentioned Huggins's claim that carcinoma of the prostate gland can in many instances be checked by administration of the synthetic oestrogen known as diethylstilboestrol. It has now been confirmed that such cases can be rendered symptom-free and so maintained for long periods. A report from Middlesex Hospital states that a large series

of cases of carcinoma of the prostate are now under treatment with various doses of the three synthetic oestrogens—stilboestrol, hexoestrol, and dienoestrol—and the clinical and x-ray picture and other indications are being closely watched.

Some work has also been done at the Royal Cancer Hospital, London, and at the Christie Hospital and Holt Radium Institute, Manchester, on the treatment of cancer of the breast with another synthetic oestrogen, triphenylchloroethylene. Out of 22 cases of late cancer so treated, 10 have shown a significant, though temporary, retardation, or even partial regression of the growth of the tumour, but the initial effect of the treatment passes off comparatively rapidly, and except in one case, which has shown prolonged arrest, the ultimate course of the disease has in no way been altered. In 14 cases of carcinoma of the breast treated with stilboestrol by the same teams, 5 showed similar alterations in the growth and behaviour of the tumour. Mr. Lockhart-Mummery comments that while "the results are not of any immediate practical importance, the fact that a marked response was shown in some cases is, clearly, of the very greatest interest and provides a real incentive to the prosecution of this work."

**Radiobiology and Radiotherapy**

Some quantitative observations from the Strangeways Laboratory, Cambridge, on the effect of x rays and gamma rays of radium on tumours of the cervix uteri and also of the tongue and oral cavity seem to support the opinion given at an earlier stage of the work that the significant biological factor for the successful radiotherapy of these tumours is the capacity of the tumour cells for differentiation. In a series of tumours of the cervix the conclusion was that an increase in dose was not correlated with improvement of results in the differentiating types of growth, but with some improvement in the more anaplastic types.

In cancer of the cervix uteri treated with combined radium and x rays, diarrhoea and other intestinal disturbances have been not uncommon, but these have not been observed in cases treated by radium alone, and it is suggested in a report from the Marie Curie Hospital that further investigation should be made before the combined technique as a routine method is held to be justifiable.

The research department at Westminster Hospital reports promising results in radiation treatment of osteoclastomata (dose: 2,000 roentgens).

**"The New Alchemy"**

A brief note in the report announces that an account is in the press concerning five years' treatment of cancer cases by the million-volt x-ray installation at St. Bartholomew's. The scientific committees of the Campaign consider that the time is opportune for an intensified effort in this field. Prof. F. L. Hopwood, at the annual meeting, pointed out also that with the cyclotron every member of the series of natural elements can be disintegrated and transmuted. Quantities of these substances have been given a radio-activity comparable to, or even exceeding, that of the radium family of elements. In addition, beams of neutrons are being produced whose penetration into, and lethal action upon, living matter differ notably from those of x rays. Radio-active varieties of such elements as iodine, calcium, phosphorus, iron, and sodium can be introduced, either distributed throughout the whole body or selectively deposited in certain organs, in the form of non-toxic chemical compounds, and there they may effectively irradiate the surrounding tissue. "Thus the alluring prospect is opened up of combining radiation therapy and chemotherapy in a new method of attack on cancer. . . . The new alchemy seems to offer glittering prizes. We must beware lest it also adds to the number of martyrs to science."

**Primary Gastric Cancer**

Finally, the Clinical Cancer Research Committee of the Campaign presents this year a detailed analysis of 1,405 cases of primary cancer of the stomach.

The proportion of males to females was 3 to 2, and the mean age of onset was 60 in both cases. It was found that 54.5% of the patients had consulted a doctor within the first three months, and that 52% were referred to hospital at once, 13% were kept under symptomatic treatment for periods up to three months, and a

further 19% for over four months. The seriousness of the position is shown by the fact that of 241 gastrectomies, only 22% were done while the symptoms were of less than three months' duration, and only 40% of less than six months' duration. Laparotomy was performed in 49% of all the cases, but in only 17% was a radical operation possible, and a palliative operation in only 15%. The survival rate after radical operation in the early stages, before the regional lymph nodes were involved, gave, on the basis of a four-year period of observation, an expectation of life of 65 to 70% of the normal. When only a palliative operation was possible the expectation fell to 40% of the normal. Operation mortalities were as follows:

	Per cent.
Total gastrectomy (20 cases)	90.0
Bilroth's operation (27 cases)	25.9
Polya's operation (181 cases)	25.4
Palliative gastrojejunostomy	29.0
Simple exploration	23.0

**NEW YEAR HONOURS**

(Concluded from p. 23)

We print below the conclusion of the New Year medical Honours List:

*O.B.E. (Military Division)*

- EDMUND HENRY BOTTERELL, Lieut.-Col., R.C.A.M.C.
- FRANK PERCIVAL LLOYD, V.D. Lieut.-Col. (Acting Col.), R.C.A.M.C.
- JOSEPH ARTHUR MACFARLANE, E.D. Col., R.C.A.M.C.
- LORNE CUTHBERT MONTGOMERY, M.C., V.D. Col., R.C.A.M.C.
- DONALD ROBERTSON WEBSTER, Acting Surg. Capt., R.C.N.V.R.

*O.B.E. (Civil Division)*

- JOHN BEATTIE DUNLOP, M.B. Post Office Medical Officer, Bradford, Yorkshire.
- VICTOR LAURENCE FISHER, M.R.C.S. Senior Surgeon, s.s. *Stratheden*, Peninsular and Oriental Steam Navigation Company.
- DONALD MCFARLANE LIVINGSTONE, M.D. Senior Medical Officer, Surrey County Council. For services to Civil Defence.
- HAROLD ETRICK MOORE, M.B. Civilian Adviser in Rehabilitation to the Air Ministry.
- MATTHEW BURROW RAY, D.S.O., T.D., M.D., M.R.C.P. Col., Medical Assessor to the Joint War Organization of the British Red Cross Society and Order of St. John.
- CAMPBELL KAY STEVENSON, M.D. Medical Superintendent of the Emergency Hospital at Killearn, Stirlingshire.
- CHARLES LINDSAY SUTHERLAND, M.D., D.P.H. Chief Medical Officer of the Silicosis Medical Board.
- ALEXANDER BOYD WILLIAMSON, T.D., M.D., D.P.H. Medical Officer of Health, Portsmouth. For services to Civil Defence.

*M.B.E. (Military Division)*

- CHARLES HOLLENBERG, Major, R.C.A.M.C.

**ASSOCIATION OF VOLUNTARY TEACHING HOSPITALS**

At a meeting of nominated representatives of London and Provincial teaching hospitals, held at Westminster Hospital Medical School on Dec. 7, it was agreed to form the Association of Voluntary Teaching Hospitals of Great Britain, the object being to have an organization available which, with its specialized knowledge and experience of teaching hospital problems, will be able to represent those hospitals at all times. It is thought that it will serve a very useful purpose in any planning or negotiations arising out of the Good-enough Committee's report. Among those attending this inaugural meeting were: Dr. H. E. A. Boldero (Middlesex Hospital), Dr. W. Russell Brain (London Hospital), Dr. E. ff. Creed (King's College Hospital), Mr. W. D. Doherty (Guy's Hospital), Mr. G. B. Edwards (University College Hospital), Dr. Hugh Gordon (St. George's Hospital), Dr. F. G. Hobson (Radcliffe Infirmary, Oxford), Prof. T. B. Johnston (Guy's Hospital), Mr. G. H. MacNab (Westminster Hospital), Dr. E. F. Scowen (St. Bartholomew's Hospital), Dr. S. Cochrane Shanks (University College Hospital), Mr. Fauset Welsh (Birmingham United Hospital), Mr. J. M. Wyatt (St. Thomas's Hospital).

Further developments in the plans to deal with nutrition problems in the Colonial Empire are to be financed under the Colonial Development and Welfare Act, 1940, and a free grant of £10,000 has just been sanctioned. A grant of £3,200 to cover preliminary work in connexion with the proposed Colonial Nutrition Organization was made last June. The new scheme is to enable grants to be made for *ad hoc* proposals for interim developments—e.g., engagement of temporary technical staff, training of staff, provision of technical equipment or materials required for experimental work.