

British Medical Journal.

SATURDAY, JANUARY 29TH, 1927.

CANCER, RESEARCH, AND COMMON SENSE.

THE British Medical Association has been fortunate in obtaining the consent of Sir Berkeley Moynihan to deliver the first of the popular lectures it has instituted and associated with the name of Sir Charles Hastings, the far-sighted provincial physician who founded it nearly a century ago. He and the friends with whom he was associated were careful to define its objects so widely that the instruction of the public comes well within its scope. The President of the Royal College of Surgeons of England, who has often before taken an active part in the work of the Association, made an opportune choice in taking "cancer and how to fight it" as his subject, and we make no doubt that, though addressed to the public, his lecture will be eagerly read by members of the profession. It is published in full in the SUPPLEMENT this week. The discussion of the cause of cancer has both a pathological and clinical side, and on the latter no one can speak from an experience more extensive and varied than the lecturer. Most of us recognize that it has a sociological side also, and we shall have the better grounds for this conviction after studying the Hastings Lecture, and the admirable speech of the Minister of Health (p. 207), which made it plain that he has a sure grasp of the problem and of the way in which it should be attacked.

Increased interest in cancer has been forced on the modern civilized world by the increase in the number of cases, as shown by statistics, and by the fact that, as the lecturer said, probably few families escape it for three consecutive generations, so that nearly everyone knows of some relative who died of it. A demand that the increase shall be stopped and the number of cases diminished is therefore only in the nature of things. The public has lost the old fatalistic attitude towards disease, and is now very well aware that the best hope of prevention lies through knowledge of the cause. It has therefore been ready to listen to suggestions, some of them very dogmatically expressed, on the cause of cancer. Medical literature is encumbered by a mass of writings consisting of positive assertions about the cause of cancer which, when examined, turn out to be no more, or very little more, than assertions and reassertions of individual belief. A theory more or less plausible is propounded: all the facts that are in agreement with it are gathered together, and those which are not are ignored or brushed aside. For some cancer is an infectious disease; this, they hold, is obvious, and point to certain analogies between it and, say, syphilis. To others it is equally obvious that cancer is not infectious, that it is not due to the introduction of some external agent. Some find its cause in overeating, generally of meat; others in a failure of tissue nutrition attributable to a perversion or gradual lowering of the process, and these can point to the fact that cancer, though it may occur at an earlier age, is in the main a disease of later middle life. The public, as has been said, is deeply interested, and these assertions and theories have been finding their way into the newspapers and popular magazines. This is, of

course, very natural, and, regarded from one aspect, very desirable, since the public needs to be educated; evil in it is working its own cure, for many of the theories are mutually destructive, and the intelligent layman is now disposed to ask whether any of them are of any value. A distinct change is also, we think, to be observed in the attitude of the skilled journalist, who, though he may publish the confident assertions so profusely made, has grown far less ready to father them and to blame the medical profession for not accepting them and acting upon them.

Sir Berkeley Moynihan discussed with great common sense—if we may use the phrase without appearing impertinent—the knowledge we have, both positive and negative, and drew two conclusions as to what can be done for and by this generation. For the man and woman of to-day the essential fact is that cancer is always at first a local disease—not a general, or, as some quacks advertise, a "blood disease." Therefore the treatment of cancer to-day is by removal of the primary lesion. If we do not yet know how to prevent cancer we know how to prevent its extension in the individual. The lecturer did not tell the public baldly, as some in search of a slogan have done, that "cancer is curable." He said that it may be cured if certain conditions are fulfilled, but that they can be fulfilled only if the individual knows and acts upon ascertained facts. The fear of cancer is very general and very deep, and often has an effect directly opposite to that which common sense would dictate. Elsewhere in this issue is the report of a case (p. 187) in which a woman suffering from a non-cancerous disease endured extreme pain and discomfort rather than go to a doctor for fear that she might be told that it was cancer. This state of apprehension is so common as to be within the experience of every practitioner, and the lecturer quoted with approval Mr. Hastings Gilford's statement in his recent book to the effect that this attitude must be wrong, and that failure to force the real facts into the consciousness of the public causes "the subject to assume forms in the imagination more terrifying than they actually are." As Sir Berkeley Moynihan said, "fear should be the fear of delay." Therefore it is that the Yorkshire Branch of the British Empire Cancer Campaign, the establishment of which with a sufficient capital sum at its disposal is so largely due to his own efforts, has realized the necessity for the education of the public.

His second conclusion is that a strenuous effort must be made at once to discover by research—"ceaseless research"—the cause or causes of cancer. Here much more is being done than even a few years ago. The hand was first placed to the plough by the clinicians and histological pathologists of the last quarter of the last century, who found out, with much labour, what the cancerous process really is. The ground was turned over again by the Imperial Cancer Research Fund, which applied the experimental method; and now research is being eagerly prosecuted in many places and by clinical, epidemiological, and laboratory methods. In London there are, in addition to the fund just mentioned, the wards and laboratories of the Cancer Hospital and of the Middlesex Hospital; in Manchester there is the organization of which an account was given a fortnight ago (p. 116); and for the whole country, or rather for the whole Empire, there is the British Empire Cancer Campaign, of which the Yorkshire scheme is a branch; in Liverpool, as our readers know, a courageous plan for treating cancer, when already present, is being tested. The three methods of research—the epidemiological, the clinical,

and the laboratory, must go hand in hand. Hitherto the clinical has gone ahead, but he who would seek to put it into antagonism with the others will do the cause no service.

CONTROL OF INFLUENZA.

In February, 1919, during the great influenza pandemic, which surpassed all its predecessors in severity, the Local Government Board drew up a memorandum on the prevention of influenza. On July 1st of that year the Local Government Board became merged in the newly created Ministry of Health, and in the following December, when a further outbreak seemed possible, the Ministry issued to sanitary authorities a revised version of the memorandum. Now, seven and a half years later, in view of the prevalence of influenza in certain countries abroad, and the "possibility" (now unfortunately fulfilled) of the epidemic spreading to this country, a third edition has been prepared, and copies were circulated on January 19th.¹ The returns of deaths due to influenza are a good index of the severity of an outbreak, but the extent of its spread cannot be gauged like that of a compulsorily notifiable infection. It appears from a circular accompanying the memorandum that "neither the incidence of, nor the mortality from, influenza in this country is at present such as to cause serious anxiety." Nevertheless, though the cases are for the most part mild, as compared with those of 1918-19, all the indications, public and private, go to show that influenza is now very prevalent in England, and the number of deaths attributed to it has in fact been rising week by week. A concise statement of present knowledge about this baffling complaint, such as the Ministry of Health has now issued, is therefore timely.

As before, the memorandum is arranged in three parts. A short introduction, historical and epidemiological, precedes some general observations on influenza and the individual action required in times of epidemic, and these are followed by an outline of the steps that should be taken by sanitary authorities to combat outbreaks and assist the victims. The introduction has been brought up to date in various respects, mainly by showing in tabular and graphic form the history of influenza in England and Wales since 1919. The second part contains a good deal of new matter, and we note that some suggestions for personal protection have been modified. Thymol is now favoured for gargles and mouth-washes; face masks are no longer advised; and as for prophylactic vaccines, "such direct evidence as the Ministry has been able to collect does not encourage an optimistic view of their value." But it is in the paragraphs on the bacteriology of influenza that the great uncertainty of our present knowledge of this disease is most clearly brought to light. Negative statements abound. Thus: "No sure means are yet available for distinguishing the 'common or influenzal cold' from true influenza, nor is it yet certain that they are distinct clinical entities." And again: "No conspicuous advance has been made recently in our knowledge of the bacteriology of influenza. Opinion is still divided between adherents of Pfeiffer's theory and those who believe that the true causal agent is some other organism—probably a filter-passer. . . . The present outlook as to the primary causation, therefore, is not particularly hopeful."

If to know how little we know is the beginning of wisdom, then some progress has been made since the

last pandemic. We have learnt that our ignorance about influenza is even greater than was supposed. But negative findings in a matter of such great public importance should act as a spur to further extensive and intensive research into the natural history of the disease, and into the character and life-history of its infecting agent. Prophylaxis fights with one hand tied behind its back so long as etiology is obscure. It is true that some attempt is made in the memorandum to answer the question why bacteriological progress is so slow, but this philosophical explanation will give cold comfort to the practical sanitarian. The common-sense advice on what a patient should do when attacked is helpful. Equally sound is the advice to local authorities on the steps they can usefully take during a wave of epidemic prevalence, with its insistence that the most important thing for them to do is to organize the available nursing service and provide help for influenza-stricken households. But all this only emphasizes the need for some practical and efficient method—based on knowledge—for preventing and controlling this readily communicated infection of the upper respiratory passages. It is therefore gratifying to read that since the *Report on Influenza* was published by the Ministry of Health in 1920 other investigations have been initiated under its auspices, and "a comprehensive study is being made of the flora of the nose and throat, with particular reference to the organisms associated with the complications of influenza, and the possibility of correlating changes in their distribution with the occurrence of epidemics." The present outbreak should afford opportunities for this kind of field work on a much larger scale than was possible under the war conditions of the last pandemic.

The essential difficulty of the situation is well put in the following passage: "As yet we do not know the nature of the living virus to which influenza is due. The laboratory has not yet given us a specific form of treatment of influenza or of protection against it." Since, moreover, no drug has been proved to have any specific influence as a preventive, it seems clear that a satisfactory means of checking the spread of this infection must await further and more intensive research.

VENTILATION OF "ALL-ELECTRIC" HOUSES.

WHEN Leonard Hill shut up his devoted hand in the hermetically sealed glass chamber till the percentage of oxygen had fallen so low that a match could not be ignited, he found that the uneasiness produced was at once relieved by the cooling effect of air set in motion by electric fans, and so proved in a convincing manner that the discomforts felt in vitiated air are due to its warmth and humidity, which interfere with the normal heat-loss of the body and so derange its function. The use of fans has been found beneficial for crowded halls, and in warm climates for habitations, but this can scarcely be recommended as conveniently applicable to the ordinary dwelling-house in this country. We therefore have recourse to ventilation, which replaces the warm moist air inside by cool and relatively dry outdoor air. Ventilation is good not only for comfort, but also as a safeguard against the spray infection by which many communicable diseases are spread, since the entering fresh air sweeps all ill things away, including the floating germs. The circulation of air through inhabited rooms has thus a double value. One of the best means to secure it is a flue or shaft opening permanently into the open air. In the form of a chimney its use has hitherto been practically universal in Great Britain for all houses great and small. With a good fire

¹ Ministry of Health Memorandum on Influenza. Revised edition. Memo. 2/Med. H.M. Stationery Office. 1927. 2d net.

burning the average chimney may circulate 20,000 cubic feet of air an hour. Without a fire, so long as the chimney retains its heat, a current of air moves steadily up it. Even after it has cooled down the blowing of the wind across its free opening acts as an aspirator for the room and keeps the air in continual movement. In rooms without chimneys it is recognized that an alternative arrangement is necessary. Some building by-laws require the provision of a shaft in the ceiling, leading vertically to the open, to give the chimney effect. In the "all-electric" houses now being erected by certain local authorities, which need no fireplaces and so possess no chimneys, air-bricks set in the walls of rooms are the device proposed. The value of these appliances has been questioned. In view of the well known capricious action of most aids to natural ventilation, it is perhaps somewhat rash to dogmatize beforehand on the probable conduct of the air-bricks, but whether they act as inlets or outlets, or both, they seem, on the whole, unlikely to be such effective exhausts as the chimney or ceiling shaft, and therefore less fitted to keep the air of rooms in gentle and steady circulation. It may be conceded that the cost of special ventilating shafts for these subsidized houses would be a serious item; it may be conceded also that windows are supplied which people can open if they will; yet the impression remains that the "all-electric" house, bereft of its chimney for reasons of economy, will prove to be less adapted for automatic ventilation than the old-fashioned dwelling with its grates and coal fires, which decorate the air of our cities with smoke wreaths and produce our winter fogs. The prevalence of air-communicable infectious disease in "all-electric" houses, should they be erected in sufficient number to afford material for an inquiry, may throw an interesting light on this question in the years to come. *Experientia doccebit.*

LABORATORY SERVICES IN AUSTRALIA.

WE referred lately¹ to the measures now in prospect in Australia to carry out the recommendations of the Royal Commission on Health for the more effective co-ordination of the health services of the Commonwealth and its constituent States. An estimate of the advances which have already been made, as exemplified in the provision of serums, vaccines, and other biological products, may be formed from a recent account of the Commonwealth Laboratory Service prepared by the acting Director of the Laboratory Division of the Commonwealth Department of Health. Prior to 1914 Australia was almost entirely dependent on supplies of biological products obtained from overseas. During the war these imports rapidly diminished, till an acute shortage of diphtheria antitoxin brought matters to an issue, and a scheme was devised by Dr. J. H. L. Cumpston for the establishment of laboratories, situated within the Commonwealth, for the production of these substances. After preliminary work during 1917 at the Melbourne Hospital, the Central Laboratories at Royal Park, Melbourne, were occupied in 1918. In 1921 a further movement was begun to set up clinical pathological laboratories in country stations throughout Australia. There are three such laboratories now in Queensland, one in each of the remaining four mainland States, and one in New Guinea, making eight in all. They act in co-operation with the Institute of Tropical Medicine at Townsville in Queensland. The work of the Commonwealth Laboratories at Melbourne includes the preparation of serums for the treatment of diphtheria, anthrax, cerebro-spinal fever, pneumonia, puerperal fever, scarlet fever, gonorrhoea, influenza, and tetanus. Vaccines are produced for the prophylaxis or cure of cholera, dysentery, typhoid fever,

influenza, whooping-cough, plague, and other diseases. Insulin also is prepared in large quantities, and the need for a continuously available supply is kept prominently in view. Another staple product is calf lymph for vaccination against small-pox. The laboratory staff carry out epidemiological inquiries, and investigate epizootics, such as plague in rats, which threaten the health of the community. Milk, food, water, and sewage are analysed; bacteriology is taught, and medical officers and technical assistants are trained in public health work. Among pathological researches the cancer problem has engaged attention. The eight country laboratories perform diagnostic work in bacteriology, biochemistry, and clinical pathology, investigate local outbreaks of disease, and act as local distributing stations for the biological and other products of the central laboratories at Melbourne. Some, having x-ray plant, can extend to surrounding medical practitioners the resources of radiology. Some have also made special inquiries into particular problems—such, for example, as diphtheria at Bendigo, miner's phthisis at Kalgoorlie, lead poisoning at Port Pirie, and a typhus-like disease at Toowoomba. The laboratory system of the Commonwealth is fundamental to the health of Australia. Alike in its centre and in its country branches, it reflects much credit on those who devised it and first set it in motion. In ten years it has won independence for Australia in the matter of biological products—an asset of primary importance whether in peace or war. Centred at Melbourne and ramifying into the States, it suggests to the mind the value of co-operative action, and by its mere existence may serve as a stimulus to that further co-ordination between the Commonwealth and the States for health purposes which the Royal Commission has advised.

THE RATE OF THE CIRCULATION.

MANY efforts have been made to devise a method for determining the rate of the circulation in man. For various reasons the laboratory methods have not been applicable; that of Fick, for instance, needed a sample of blood drawn by puncture from the right ventricle. Several modifications, by which the gas content of the venous blood was obtained indirectly, were devised in order to apply the method to man, but the results were not consistent and reliable. More recently a method involving the inhalation of nitrous oxide was suggested by Krogh and Lindhard. This, however, did not yield consistent results in practice. Quite recently Henderson introduced a method depending on the inhalation of ethyl iodide, which would seem to be easy of application and to give consistent results. It has been used at the London School of Medicine for Women, and Professor Cullis and her colleagues, Olive Rendel (Riddell Research Fellow of the Obstetrical and Gynaecological Unit) and Ellen Dahl, believe that it is capable of wide clinical application.¹ A similar experience has been reported with the same method in Germany. In order to estimate the rate of the circulation the following data are necessary: (1) the volume of inspired air; (2) the concentration of ethyl iodide in inspired air; (3) the concentration of the ethyl iodide in the expired air; and (4) the concentration of the ethyl iodide in the alveolar air. The solubility of ethyl iodide is such that its absorption depends entirely on the flow of blood through the lungs. The amount absorbed in the experiment is far below the threshold of any pharmacological action. It is so thoroughly destroyed in the body that the venous blood reaching the lung may be regarded as free from ethyl iodide. The distribution between the air in the alveoli and the blood is such that the amount in the alveoli needs to be multiplied

¹ BRITISH MEDICAL JOURNAL, December 25th, 1926, p. 1234.

¹ *Journ. of Physiol.*, lxxii, I, p. 104.

by 2. The amount of ethyl iodide in the various samples of air can be very accurately estimated by passing the air over iodine pentoxide. The difficulty at the moment is to obtain with the apparatus designed by Henderson a real sample of the alveolar air, and Dr. Cullis found it necessary to check the sample so obtained against those obtained by the Haldane-Priestley method; that in use tended to give too low values for the CO_2 . Apart from this criticism, which probably can readily be met, the method is said to be easy, readily applicable, and to give consistent results. The actual calculation of the circulation rate is derived from the fraction $\frac{a}{b}$ = circulation rate. The numerator (a) is got by multiplying the volume of inspired air per minute by the difference between the content of ethyl iodide in the inspired and the expired air. The denominator (b) represents the content of the alveolar air in ethyl iodide multiplied by 2. The result is usually expressed as the stroke index—that is, the output per beat in cubic centimetres per kilogram of body weight. For a normal man at rest Henderson got a stroke index of 1.5 to 1.8. In the recumbent posture this rises to 2 c.cm.; when standing it drops to 1 c.cm.; during vigorous exercise it may reach 3.5 c.cm. Dr. Cullis and her colleagues obtained a figure of 1.7 c.cm. for the stroke index of women at rest. The method should have considerable clinical value if further experience justifies the claims put forward.

NASAL OBSTRUCTION AND JAW DEVELOPMENT.

From structures in the human body have been submitted to so searching a scrutiny as the jaws, a fact which is well evidenced in Dr. Sim Wallace's Cartwright Prize essay on variations in the form of the jaws, which has now been published.¹ To mention only the lower jaw, precise investigations have been carried out to elucidate the why and wherefore of variations as regards size and form, not only of the whole bone, but also, by separate researches, of its individual parts—its body, ramus, coronoid and condylar processes, angle, alveolar border, mental process, mylohyoid ridge, genial spines, and teeth. In many instances these researches have been conducted with a precision which is remarkable; for instance, it has been estimated that the breadth of the dental arch in bottle-fed infants is narrower than in breast-fed children by a fraction of a millimetre. The subject is the more interesting owing to the varied standpoint from which it has been approached. For the anthropologist the lower jaw has always had a great attraction; to the biologist it affords many fascinating problems; to the physiologist it presents numerous instances of the correlation of form and function; while to the medical practitioner its importance in connexion with such conditions as pyorrhoea and oral mal-hygiene is now well recognized. One of the most interesting sections of Dr. Wallace's essay is that relating to the growth of the alveolar processes in the vertical direction and the height of the palate. It has been customary to refer the well known facial deformities associated with the presence of adenoids to the habit of mouth-breathing and the pressure of the cheeks on the dental arches. It has been supposed that when the posterior nares are blocked by adenoids there results a cessation of the rhythmic increase and decrease of pressure in the air sinuses, which is assumed to occur during respiration, and that defective expansion of the maxillae, high palate and narrowing of the face, and other deformities observed are due to this circumstance. The author is inclined to reject this theory for more than one reason. Statistics have shown that in a thousand normal children the facial deformities are almost as frequently

met with as in children who had been operated on for pronounced adenoids, proving, apparently, that the deformities and the adenoids are independent phenomena. Dr. Wallace is disposed to attribute the deformities to deficient action of the masticatory muscles in early life, resulting in imperfect growth of the jaws. Defective action of these muscles in the growing period leads to overeruption of the molar teeth and heightening of the alveolar processes anteriorly and of the palate. This, with the defective development in the size of the jaws, leads to the production of the narrow, hatchet-shaped face which has been attributed to the presence of adenoids. The hatchet face is commonly found in cold and damp climates, where the nasal passages become blocked, more or less habitually, long before adenoids cause any obstruction. The congestion of the mucous membrane and the discharge not only impede respiration, but indirectly interfere with the due exercise and development of the muscles of mastication. The practical deduction from these observations would seem to be that the proper treatment both of adenoids and the facial deformities is prophylactic, and should be directed towards the removal of all conditions which interfere with the due exercise of the masticatory muscles in infancy. We have referred to one point only in this interesting essay; other sections, dealing with such subjects as the effects of pressure and tension on the growth of the jaws, the post-natal developments of the jaws, and the mechanism of production of superior and inferior protrusion and the open bite, are hardly less interesting. The whole subject, with its numerous and somewhat complicated data, is handled with exceptional lucidity.

ST. HELENA.

A CORRESPONDENT has sent us a copy of the *S. Helena Diocesan Magazine* for December last, which is edited and printed by the Rev. L. C. Walcott, the vicar of Jamestown. This little monthly of fourteen pages resembles a parish magazine, but it is the only thing in the way of a newspaper that is published on the island. It is well known that St. Helena is a volcanic island whose origin has impressed upon it its picturesque and rugged character. It has a population of little more than 3,500, and, judging from the magazine, the principal occupations of the islanders are growing and preparing New Zealand flax from the familiar *Phormium tenax* and playing cricket, for the programme for a season of less than three months includes twenty matches. The account given of the flax mills displays a darker side of the picture. An editorial paragraph states that the hours of labour are sixty-six a week, yet these long hours are not objected to by the workers, because it is piece-work. But the writer says that these hours have a bad effect, and he attributes the prevalence of weak hearts among the people to this cause. Certainly eleven hours is much too long for a night shift, and probably both employers and employed would benefit by a shortening of the hours of labour. The vital statistics of St. Helena, as far as they can be gathered from the record of baptisms, marriages, and burials for August and September, are satisfactory. There were 15 baptisms, 19 marriages, and 7 burials (3 of females and 4 of males, the latter including an infant 6 days old). Excluding the last named, the aggregate age of the three males was 183, and of the three females 125 years, giving a very unusual ratio, but the numbers are obviously too small to furnish any trustworthy average. Beyond these statistics there is no mention of the health of the island, from which we may conclude that no unusual sickness existed. The editor, however, has extracted from the St. James's Church Books a note of a small-pox scare in 1789 and of the measures then taken to protect the people of the island. The

¹ *Variations in the Form of the Jaws*. By J. Sim Wallace, M.D., D.Sc., L.D.S. London: Baillière, Tindall and Cox. 1927. (Double roy. 16mo, pp. xii + 265; 84 figures. 17s. 6d. net.)

Governor at that time was Colonel Robert Brooke, who wrote a letter to the vestry meeting warning them of the necessity of taking measures to prevent the spread of small-pox, which had been brought to the island by shipping. He reminds the vestry that: "It was argued I suppose that ships heretofore had come into harbour with small Pox on board and the very Clothes of the Sick washed without infection spreading, that of course no such Distemper could ever get footing amongst us." He went on to recommend unanimity and equanimity and the measures advised by the surgeons, Messrs. Kay and Dunn. These included isolation of the sick in a special hospital and postponement of inoculation of the susceptible population till it was seen if the infection spread, and these recommendations were adopted. We have no information as yet as to the subsequent history of this threatened epidemic. We hope that Mr. Walcott will publish the results of further inquiry in a subsequent number of the magazine. In 1789 the island was a possession of the Honourable East India Company, and flourished on the trade of furnishing supplies to shipping, but after the opening of the Suez Canal and the consequent decline of the sea traffic round the Cape of Good Hope it fell upon evil days, so that at present only about thirty vessels call there annually. The introduction of the phormium flax industry and of lace-making has increased the prosperity of the community. St. Helena, which boasts a St. Paul's Cathedral, is an episcopal see, of which the diocese includes the islands of Ascension and Tristan da Cunha, that lonely island about which an annotation appeared in our issue of January 1st (p. 28). Opportunities of the Bishop's visiting his flock and the newly appointed vicar of St. Mary's on Tristan are very rare, but communication with Ascension, which has a population of over 1,400, is direct and regular.

SLEEPING SICKNESS IN A FRENCH COLONY.

FRENCH Equatorial Africa extends from near the tropic of Cancer to five degrees south of the equator. It touches Lake Chad, and includes the Cameroons and the Middle Congo. As stated in a recent account of French overseas medical services, it is at present the scene of an outbreak of sleeping sickness of very great severity. This disease, transmitted to man by the tsetse fly, though uncommon in French West Africa, is widely endemic in the equatorial colony. In all districts south of Fort Archambault it is creating such havoc as to challenge the resources of the local administration. In Upper Shari, of 101,195 persons examined, 4,518 had sleeping sickness. In Ibenga-Motaba the corresponding figures were 51,679 and 2,996. For individual villages in Middle Logona the endemic index has ranged from 35.71 to 90 per cent. Economically and in general this visitation has had disastrous results. Saiak, for example, once a thriving post and possessed of a factory, is now derelict. Dr. Huot, who is familiar with the country, has remarked that in all seriously infected areas virulent outbreaks of trypanosomiasis are preceded by political disturbance. Exactions by chiefs, rivalry of races, or the inherent turbulence of the tribes produce conditions which may amount to anarchy. Cultivation lapses; regular villages are abandoned, and their whilom inhabitants wander through the bush in continual fear of their enemies. Malnutrition soon overtakes them; their resistance to the fly-borne trypanosome is lowered, and as a result their endemic infection assumes an epidemic form. The view has been held that in these stricken areas people flee from their villages to escape from an epidemic already loosed among them. Dr. Huot's observation is to the opposite effect. The flight precedes the epidemic outburst, and is its determining cause. The campaign against sleeping sickness in French Equatorial Africa was organized

in 1921, when the infected territory was divided into centres, each with a mobile sanitary detachment. The prophylactic measures adopted are therapeutic, preventive, and administrative. The therapeutic line of attack has had most success. It is the elimination of trypanosomes from the peripheral blood of patients by six separate injections of atoxyl at intervals of ten days. Its rationale is obvious: a patient so treated, though bitten by a tsetse fly, is not a source of infection. The preventive measures include clearing the undergrowth which the fly frequents, wearing puttees, using mosquito curtains, and proofing river steamers with wire gauze. Among the administrative measures are the resettling of villages, the collection of infected communities in accessible places, the supervision of labour, and the control of migration. The prophylactic centres now number twelve. The medical personnel is forty-two, and will be raised to fifty. The control of sleeping sickness in this wide region, four times the size of France, makes high demands upon the devotion of the officers engaged in the work. The progress of the campaign will be watched with interest in England, which has similar problems in adjacent fields.

THE STEAM CAUTERY IN TREATMENT OF SKIN AFFECTIONS.

AN interesting demonstration was given at the meeting of the Section of Dermatology of the Royal Society of Medicine on January 20th with the steam cautery devised by Mr. H. S. Souttar, on the suggestion of Dr. J. H. Sequeira, for the treatment of large fungating carcinomata of the face difficult to deal with by direct surgery. The arrangement used consisted of a small boiler, heated by motor fuel, the steam from which passed through the flame, and emerged in a superheated condition. An applicator, which could be of any diameter, was screwed on to the end of the steam nozzle, the steam keeping this applicator at a constant temperature of 100° C. Mr. Souttar demonstrated the action of the cautery on a piece of meat, which showed definite coagulation within one minute. He said that penetration took place at the rate of about one inch in ten minutes. He had used it for a tumour of the face six inches in diameter. He showed two cases in which epithelioma had supervened upon lupus, and in which, after treatment in this way, there was no deformity. When a growth of the face was being treated a finger placed in the mouth prevented the process from being carried too far. Mr. Souttar's most remarkable result with it was in the case of a large burn, caused by x rays, on the epigastrium, in which he had to excise a block of tissue 4 inches in diameter. A clean first-intention wound was produced, and there was only a line such as would be left by an upper abdomen operation when the patient returned home. He thought the apparatus might have a wide application in dermatology. Dr. Henry Semon showed four cases which he had treated with Mr. Souttar's apparatus. One was a patient with lupus vulgaris of the face and neck of twenty years' duration; another had epithelioma of the ear of four years' duration, and after diathermy perforation of the cartilage had occurred, and the condition came again; another was a hairy mole, which developed a keloid formation, for which radium was being applied; and the fourth was a case of epithelioma at the external angle of the orbit. He had found that the apparatus quickly checked haemorrhage. Dr. Sequeira said that he could confirm all that had been said of the method by Mr. Souttar and Dr. Semon. He asked whether it would be safe to use the method when ether was the anaesthetic, bearing in mind the serious accidents which had happened with ether when diathermy was carried out. One great advantage of the method was that the operator had it completely under

control. Mr. Souttar, answering several questions, said that the apparatus was commercially available. There was no risk of exploding ether when using the apparatus, as the applicator never rose above the heat of steam; even when oxygen was being used there was no such risk, and the apparatus was being made even safer by introducing wire gauze, after the principle used in the safety lamp for miners. The rate of penetration could be taken, roughly, as inversely proportional to the square of the distance. For such a condition as spider naevus the application would be only momentary. Haemorrhage did not follow when this method was used, and there was absolute control with it. He did not see why it should not be used to cause haemostasis in deeper regions of the body, such as the bladder, and it seemed specially adapted for treating carcinoma of the cervix.

STRANGWAYS MEMORIAL.

T. S. P. STRANGWAYS, whose premature death we recently recorded, has left a widow and seven children, the five youngest of whom are still being educated. It is known to many that any part of his income which was not required for household expenses was habitually used by him to assist the Research Hospital. The immediate needs of the family have been met by subscriptions from friends in Cambridge, but a larger sum will be required to complete the education of his sons, the eldest of whom is in his second year at Trinity Hall. During the last thirty years many Cambridge medical men have been taught by Strangeways the essentials of pathology, and may feel that this is an opportunity of expressing their appreciation of these services, of his additions to medical knowledge, and of his scientific work. Cheques should be drawn to Lloyd's Bank, Cambridge, and crossed "a/c Strangeways Memorial Fund." They may be sent to the manager of the bank, Mr. G. F. C. Gill, who has kindly consented to take charge of the account, or to Sir Humphry Rolleston, Southfield, Cambridge, or to Professor H. R. Dean, Dr. M. Donaldson, Dr. G. P. Bidder, Dr. L. E. Shore, or Dr. Cobbett. A meeting will be held at the Royal Society of Medicine at 5 p.m. on Wednesday, February 2nd, at which all those who sympathize with this appeal are invited to be present.

A RETROSPECT WITH A PURPOSE.

PROFESSOR RICARDO JORGE, Director-General of Public Health at Lisbon and delegate from Portugal to the Office International d'Hygiène Publique, who is due to take part in the discussions of the International Sanitary Conference to be held in Paris next May, has, like a knight of old, proclaimed his credentials before entering the lists. He has reprinted in the *Archives* of the Central Institute of Hygiene at Lisbon some previous pronouncements of his to serve as a reminder of the stand which he made in the past on questions proposed for debate at the meeting in Paris. This publication will doubtless be effective for its ostensible object, and at the same time will make a wider appeal, since it reviews in a lucid and cogent manner epidemiological topics of general interest. Professor Jorge is against any tightening of the regulations for the control of sea-borne yellow fever. The disease is in full retreat in its own endemic areas; what need for rigour elsewhere? Stegomyia, its vector, is common in Portugal, yet between 1860 and 1921, though twenty-nine ships brought yellow fever to Lisbon, a quarantine officer and half a dozen dock labourers employed on board the ships concerned were the only persons infected. Of these twenty-nine ships twenty arrived before 1880, none after 1911. This well marked decline is ascribed, among other causes, to the increased number of iron ships. The old-time wooden ships were good breeding places for stegomyia: it does not survive the

voyage in the bilges of iron steamers. Professor Jorge lays stress on the epidemiological distinction between the pneumonic and the bubonic types of plague. Nosologically, he says, there is but one plague; epidemiologically its two forms are different diseases. Pneumonic plague, unlike bubonic plague, is primarily and solely pulmonary. It is transmitted from person to person without intermediary. It is readily controlled by isolation of the sick and contacts. It prevails in cold climates, though not restricted to them. Further, there is no question in its prevalence of symbiosis with any other organism. In particular, it has nothing to do with concurrent influenza. It is usually preceded by bubonic cases, though not invariably. Professor Müller and his assistants died of pneumonic plague at Vienna in 1898 from a direct laboratory infection: there were no preliminary glandular seizures among them. Owing to the fact that these and other pronouncements were originally uttered in course of debate, much of the reprint is controversial in form. The arguable points will come up at Paris in May. In the meantime it may be permitted to refer to Professor Jorge's views on general policy. They are on broad lines. Regarding interference with persons or goods as applied to infected ships, his opinion is that the means should fit the end but should not overstep it. He deprecates needless restriction of trade. "Hygiene," he says, "is a social question, and must keep touch with other social interests. The circulation of wealth is the basis of all well-being, and therefore of health also."

THE EPIDEMIC OF INFLUENZA.

EXPERT epidemiologists find reason to hope that the worst has been seen of the present recrudescence of influenza, although the number of deaths attributed to it have increased. The notifications of pneumonia were declining for the country as a whole in the week ending January 15th. The deaths attributed to influenza in London during the last three weeks were 72, 137, and 197; in the whole of the great towns of England and Wales, 172, 326, and 470. The age distribution of deaths has been that which, with the immensely important exception of the great pandemic of 1918-19, has been usual in outbreaks of influenza—namely, that the brunt has been borne by the elderly. The regional distribution of deaths shows that, so far, London and its environs have suffered more than other parts of the country.

THE HALF-YEARLY INDEXES.

THE usual half-yearly indexes to the JOURNAL and to the SUPPLEMENT and EPITOME have been printed; they will, however, not be issued with all copies of the JOURNAL, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this desire.

WE much regret to announce that Dr. T. Ridley Bailey died on the morning of January 25th. At the last meeting of the Council of the British Medical Association a message of sympathy was sent to him at the nursing home in which he had been operated upon. We hope to publish an obituary notice next week.

THE thirteenth annual conference of the National Association for the Prevention of Tuberculosis will be held at the British Medical Association House, Tavistock Square, London, on June 30th and July 1st.