worth while to think rather of regional gatherings together of physical characters.

Changes of environmental influence are usually cumulative, for natural processes are essentially irreversible even if, as in climate, there is something of a cyclic scheme of change. The cumulative change may be said to draw out the course of development more and more from its original path, thus creating a state of internal strain. No two embryos are exactly alike, and in some the hereditary units may vary towards, in others away from, a condition which would diminish that internal strain. Those varying so as to diminish the strain would probably grow best. So we have a theoretical possibility of variation of the germ limping after variation of the soma. In the case of man, whose development is so closely linked with varying balances of the influence of endocrine glands, the adjustment of the variation of the germ to the variation of the soma may not be very slow.

A special attempt has been made to suggest the part played by the development of social life in the evolution of human physique, and the importance of parental care. These factors seem in particular to have led in certain circumstances to a vast liberation of individual initiative within our human societies, especially after the development of intercourse between groups.

We must speedily undertake more and more biological observation and measurement among ourselves, and we must exercise ever more care in the treatment of our measurements. Averages of cases which are not properly homologous should not be made lest we mask the biological truth in mathematical abstractions. If our anthropological work can but go on becoming more biological, gaining insight into physiology, especially of the brain and the endocrine organs and their correlations with growth, I venture to think that racial study will develop great practical value for education, for the fight against tuberculosis and other diseases, and for race-improvement. Evolutionary race biology seems to be a hopeful sphere of work that may bring about a much-needed enrichment of public opinion on social questions, a diminution of race-arrogance, and a check on schemes that do not sufficiently allow for the mutual adaptations between diverse human stocks and diverse environments. I would ask for faith in the future of such work to bring out its great possibilities for nobler races with freer personal initiative in societies both more stable and richer in the things that are not seen.

The London School of Hygiene and Tropical Medicine.

HYGEIA, the goddess of health, daughter of Esculapius, was included among British *lares et penates* some fifty years ago, when the Public Health Act of 1875 was adopted. Since that time Great Britain has been a world pioneer in the achievements of its public health service. Attention was concentrated in the earlier years on drains and sanitation, but gradually the scope of the work of the public health authorities has widened. The results, as seen in the reduction of the death-rate to 12 per thousand and the consequent increase in the span of human life and in the health and happiness of the people, have undoubtedly had a bearing on industrial efficiency and national prosperity. But much remains to be done. Official evidence before and during the War relating to national physique and the statistics of diseases indicate the need for sustained effort in the health crusade. Even the layman can form some conception of the vast field for scientific research from the wonderful discoveries of which information is published from time to time, such as those relating to the curative power of natural and artificial sunlight and chemical methods of preventing goitre.

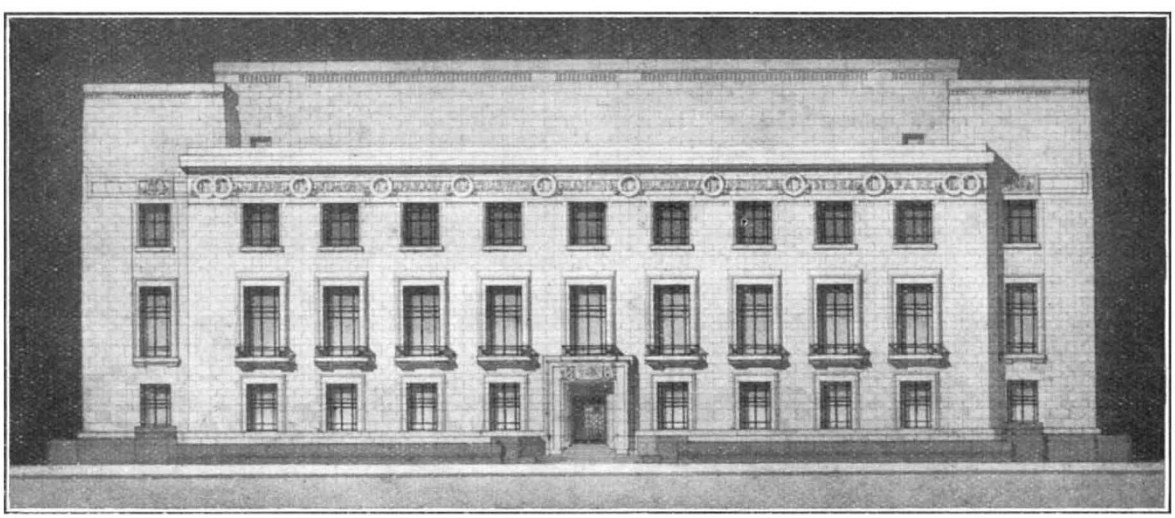

FIG. 1.—The London School of Hygiene and Tropical Medicine. Frontage to Keppel Street.

The Ministry of Health, as in duty bound, early recognised the need for extending facilities for instruction and research in preventive medicine. A committee appointed by the Ministry and presided over by the Earl of Athlone submitted a report in

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May 1921 advocating the establishment of a post-graduate medical school in London and also an institute in State medicine. An expert committee was afterwards appointed to consider the recommendation as to a new school of hygiene. Financial difficulties, which may well have appeared insuperable, were miraculously removed by the generous offer of the Rockefeller Foundation to provide two million dollars (400,000*l.*) towards the cost of the building, on the understanding that the Government would accept the responsibility for maintenance, the cost of which was estimated at about 25,000*l.* a year. The appointment, in October 1923, of Dr. Andrew Balfour as director enabled definite progress to be made in the planning and organisation of the new school, the foundation stone of which was laid by Mr. Neville Chamberlain, Minister of Health, on July 7.

Such is the brief but honourable history of an enterprise representing one of the most important educational

FIG. 2.—The design of the seal adopted by the London School of Hygiene and Tropical Medicine owes its inspiration to a coin of ancient Sicily, believed to have been struck to celebrate the deliverance of one of the cities from a pestilence caused by the stagnation of the waters of the river. The design shows the deities Apollo and Artemis proceeding slowly in their chariot, Artemis driving while her brother, the sun-god, discharges arrows from his bow. The arrows are the healing rays of the sun, which drive away the malaria mists; and Artemis is beside him as the goddess who eases the pains of women labouring with child. The fruitful date palm has been added to symbolise the tropical side of the work, and at the foot is the serpent staff of Esculapius.

and scientific developments of our day and generation. For the London School of Hygiene sets a new standard in building and equipment, a standard worthy of the subject and of the Imperial city in which that subject is to be studied and investigated. The School is also the most important example—Oriental studies and history are other examples—of the new and proper method of organising higher instruction and research in selected subjects in London under the ægis of the University, a method which will inevitably be followed for many other academic and professional subjects if and when the University, through re-constitution, obtains the necessary powers and driving force.

The main frontage of the new building, of which an elevation is reproduced (Fig. 1), faces Keppel Street, looking southwards towards the impressive north façade of the British Museum, across the vacant site purchased by the Government for the University of London, and recently re-sold to the vendor, the Duke of Bedford. Return frontages, considerably longer than the main frontage, face Gower Street and Malet Street. The architects, Mr. P. Morley Horder and Mr. Vernon O. Rees, have produced a design combining simplicity and economy with dignity and the maximum of light and air. The building will be faced with stone drawn from Portland—the veritable womb of London. In addition to the teaching of hygiene in all its branches, provision has been made for tropical medicine, the London School of Tropical Medicine in Endsleigh Gardens having been amalgamated with the new institution. Altogether, the School will accommodate 250 students, including 100 students of tropical medicine. Routine instruction will be directed towards the various degrees and diplomas in public health, which form a necessary qualification for the public health service at home and abroad. The general shape of the building is a letter H closed at the south end by the Keppel Street frontage. The north court will be left open, and the south court will contain the lecture theatre. Ventilation, it is interesting to note, will be by 'natural' means, a provision for which those who have worked in buildings ventilated by 'scientific' methods will be grateful. Possibly, however, the School may itself devise new methods of ventilation, a worthy subject of hygienic research. One-sixth of the total accommodation will be reserved for research, the large lecture theatre and museum, as well as numerous class-rooms and laboratories, being regarded for the purpose of this computation as accommodation for teaching.

The division of the subject of hygiene adopted by the School has had reference to the regulations for the Diploma of Public Health, and is as follows: (1) applied physics, physiology, and the principles of hygiene; (2) chemistry and bio-chemistry; (3) immunology and bacteriology; (4) medical zoology, parasitology, and comparative pathology; (5) epidemiology and statistics; (6) principles and practice of preventive medicine, general sanitation, and administration. Dr. Andrew Balfour, in his interesting address to the Society of Medical Officers of Health on December 12, 1924, has explained the many ramifications of these subjects. Thus applied physiology includes nutrition, ventilation, illumination, physical exercise, not only in relation to adults. One of the most encouraging developments of recent years has been the increased attention to the special hygiene of infants and children. The hygienist approaches the realm of the educationist and psychologist in such questions as rest, sleep, and fatigue; the physiology of speech, reading, and writing; tests of intelligence. In his discussion of the position of chemistry, Dr. Balfour attaches little value, from the view-point of the training of the public health officers, to pure chemistry, but stresses the importance to bio-chemistry. "The future, in many directions, lies with the bio-chemist." In Division 3, the order "Immunology and Bacteriology" is deliberate. Division 4 relates mainly to tropical medicine. As regards Division 5, Epidemiology and Statistics, Dr. Balfour recognises the need for more stimulating teaching of epidemiology, and has a good

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word to say for the methods adopted at Johns Hopkins University, under Prof. Frost. He admits that statistics is a "difficult and deadly subject for any one who is not blest with a gift for mathematics." Division 6, though placed last, is the largest and most important of all. Not less than thirteen special courses are grouped under the main heading. The subject is so wide and is developing so rapidly that Dr. Balfour's hint that "refresher" courses may be arranged for medical officers of health will not cause surprise.

It remains to add that the planning of the building corresponds to this comprehensive programme. Full details are given in the *British Medical Journal* (July 10, 1926). The lecture theatre (the flat roof of which will be laid out as a garden-court) and the museum (occupying 15,000 feet of floor space) are important features of the building. The library, a large and imposing room 35 feet by 120 feet, occupies the place of honour in the front of the building. There is a "Publications Department," in which provision will be made for informative and propaganda work. The Chemical Division in the north-east corner of the building will accommodate 70 students and the biochemical and nutritional laboratory 35 students; and there is also a number of staff and research rooms and a class-room with 70 seats. The third floor is mainly occupied by medical biology, and will absorb the greater part of the work of the old London School of Tropical Medicine in Endsleigh Gardens. It is hoped that the building will be completed in two years. T. LL. H.

News and Views.

THE sixth annual report of the Forestry Commissioners (Sept. 30, 1925) is a document of considerable interest if only for the summary it contains of a forest policy recently enunciated by the Government. A century or two has elapsed since any Government in Great Britain can be said to have held definite ideas on the subject of what a forest policy for the country should aim at. The Government of the day has now publicly recognised that the development of such a policy is largely dependent upon State action continuously applied over a period of years, a point which has for long been beyond dispute in many European countries. It is further recognised that large areas of land in many parts of Great Britain are more suited to the production of timber than food, that private forestry should be encouraged by a system of grants, and that the systematic establishment of forest workers' holdings at the rate of 5 holdings per 1000 acres of afforestable land should be aimed at. It may be said at once that this definition of the Government's opinions and aims in this matter is admirable. If persevered in, the progress of forestry should be assured.

THE total area of land acquired by the Forestry Commissioners to Sept. 30, 1925, was 286,198 acres, of which 177,633 acres were classified at the time of acquisition as plantable. Of the plantable area 100,244 acres (56 per cent.) are in England and Wales and 77,409 acres in Scotland. The Crown Woods, *e.g.* Forest of Dean, New Forest, and so forth have now been placed under the Commissioners. When the Commission was appointed it was laid down that 150,000 acres should be afforested in the first ten years. In the Acland Report the rate of planting per year was prescribed; 50,000 acres to be planted by the sixth year. This acreage has been slightly exceeded. In some respects the laying down of rigid planting prescriptions by area is unfortunate, since the effort to maintain the planting figure may result in poor or bad work and takes no account of possible losses from drought and so forth, experiences well known to all foresters. It also results in waste. For example, in the table of cultural operations in the 1925 report, 22,615*l.* is shown as expended on planting and 9526*l.* on beating up, *i.e.* filling up plantations in which deaths have occurred. This represents nearly 40 per cent. of the planting expenditure. Forestry, like agriculture, has to face unfavourable climatic factors, but the excessive expenditure alluded to above appears difficult to justify.

THE debate, which is a usual feature of the *Forum*, in the issue for August deals with the question "Is Civilization Contagious?" and is opened by Prof. Elliot Smith with a statement of the case for 'diffusion.' The argument proceeds on the lines which he has already made familiar in putting the case for Egypt as the place of origin and centre of diffusion of culture. The reply is by Dr. B. Malinowski, who argues ingeniously that the opposition between 'diffusion' and 'independent invention' is misleading. He maintains that 'invention' is not a single event for which one single individual is responsible, but a process consisting of a series of infinitely small, infinitely many, steps for which many individuals are responsible. Every cultural achievement is due to a process of growth in which invention and diffusion have equal shares. The familiar example of the 'diffusion' of a match he regards as futile because the match does not become an element of the culture of the native, but is merely a mechanical importation. So far Dr. Malinowski's formal answer to the 'diffusionist'—in effect a compromise which would commend itself to the average anthropologist, if not to the out-and-out upholder of 'independent invention,' should there be any such, whom Prof. Elliot Smith holds up to scorn. But Dr. Malinowski's quarrel goes deeper, and it is this which constitutes the real value of his contribution to the discussion. Only in the field, he maintains, can the problem be solved as a live issue and by functional analysis. Then it appears that every aspect of culture corresponds to a specific need of human nature, to the local environment, and to the general character of given civilisation. The problem is resolved then by the writer's conclusion that diffusion never takes place; it is always a readaptation. Culture is neither

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