

to this problem was provided by Charles Parsons at the end of the nineteenth century. His steam-turbine power plants enabled machinery of 70,000 S.H.P. to be installed in a liner in 1907, and the service coal consumption was nearly one-half that of the equivalent reciprocating machinery.

Following the First World War, when competition was keen to secure freights, the engineer played his part in reducing the operating costs of merchant ships. The increased use of oil-firing, the remarkable development of the oil engine, and greatly improved boiler and steam-engine designs may all be cited. When trade eased, the drive for still further economy was maintained, and at the same time the power outputs of machinery were increased to meet particular needs. During recent years particular attention has been given to the machinery of large single-screw tankers and ore-carriers which handle the raw materials of the expanding oil, chemical and metallurgical industries. The new types of prime movers are also receiving consideration. The marine gas-turbine is still in the development stage and has not reached the degree of long-service reliability and low fuel-consumption enjoyed by the other two main types of prime movers.

The marine application of atomic energy offers great attractions, particularly so far as weight and storage of fuel is concerned, but will only become possible by reducing to attractive levels the weight, size and cost of reactors and screening, and the satisfactory solution of control and maintenance problems. Auxiliary shipboard machinery has also played a prominent part in establishing new trades. The introduction of refrigerating machinery, for example, opened up the meat and farm-produce trade and brought prosperity to Australia, New Zealand and South America. The achievements of marine engineers have had considerable influence on the prosperity of nations and, with the aim of improving our living standard still further, the engineer will no doubt continue to play his part, as evidenced by the high rate of progress maintained during the post-war years.

### ANTHROPOLOGY—A SCIENTIFIC UNITY ?

DR. D. B. HARDEN, in his address to Section H (Anthropology), comes to the conclusion that the question whether anthropology is or is not a scientific unity is one that, after careful thought, can only be answered in the affirmative. He has, he says, never been answered in any other way by those who have taken part in developing anthropological studies within the British Association from its earliest years, as is clear by even a cursory glance at the historical growth of the subject up to the time when it attained sectional status in 1884 and in the years beyond.

Up to 1846 anthropology, or ethnology as it was then usually called, only appeared sporadically in the Association's programmes—usually in the Zoology or Geology Sections. In that year Section C (Geology and Geography) formed a sub-section for ethnology, and in 1851, when geography became a separate Section (E), it carried ethnology with it. The next change was in 1869, when anthropology became one of several departments within Section D (Biology). The ethnological side of Section E was then abandoned and the Geology Section ceased to carry papers on human palaeontology (as it had done from time to

time hitherto). This arrangement lasted until 1884, when anthropology was promoted to full sectional status as Section H.

Since then the Section, both in its annual programmes and through its research committees, has spread its net fully and widely over the whole field of anthropology—the study of man in the past and in the present. Its programmes have embodied pre-historic and historic archaeology (both British and foreign), physical and social anthropology, ethnology (both of primitive and advanced cultures), folk-lore and comparative religion. The Section's interests are, indeed, broad—as broad as, if not broader than, those of any other Section. So broad are they that it is impossible for them all to be properly represented in the programme every year; and the more specialist-minded of anthropologists, ethnologists and archaeologists are inclined to complain of this and to say that it is no longer worth their while to come to the meetings unless the Section is split into two or more parts, so that more papers in their own special subjects can be fitted in. This, Dr. Harden maintains, is a misguided view, for the British Association has always endeavoured to be a widely ranging body, and its objects would be defeated if one of its Sections became just another specialist conference.

Anthropology touches on so many other sciences and disciplines that there is no one sectional activity within the Association with which it does not have mutual contact at one time or another, as its previous alliances with geology, geography and biology make plain. Anthropology, the study of the human race, is, indeed, by its very nature a microcosm of the Association as a whole; properly used, the Section programme could be a unifying influence within the Association. Dr. Harden maintains that this aim cannot be achieved by trying to plan programmes which will attract and satisfy diehard specialists in even some, let alone all, of the various branches of the subject, for this will interest neither the specialist nor the more broad-minded student. He proposes that advantage be taken of the existence of other Sections in the British Association to arrange programmes which will show the overlap between them and Section H, and that members of Section H should at the same time hold fast to their unity and pay no attention to any pressure from the partitionists. To accept such pressure, he concludes, and thus encourage specialization, will do disservice not only to anthropology as a unified scientific discipline but also to the Association's own interests and policies.

### THE SENSORY PATHWAY

THE pathway from receptor to brain is in all cases built up on much the same pattern and involves a series of interruptions or relay stations where the message is transferréd to a new set of nerve cells. The theme of Dr. R. S. Creed's presidential address to Section I (Physiology) is the significance of these breaks in continuity on the way to the sensorium. What is the reason for their existence? Why is there not a direct route for through traffic? Satisfactory answers to these questions cannot be given by simply comparing the nervous system with a network of telephone lines and the relay stations in grey matter with telephone exchanges. As is known from studies of reflex action, much more may happen at synapses between nerve