most important being that which controls the varieties of adult hæmoglobin, including sickle-cell hæmoglobin.

Within any given area of sub-continental size, the gene-frequencies in most of the blood-group systems show an approach to uniformity, whereas those of the *ABO* system vary considerably between adjacent quite small areas, such as the counties of England. This suggests that the *ABO* groups have been subject to appreciable natural selection more recently than the others.

It is now known that certain diseases are commoner among persons of one blood group than of another, the most striking example being the greater tendency to duodenal ulcer among persons of group *O* than among those of other groups. Since these diseases are in part determined by the environment, we have here a possible mechanism of selection.

A better understood example of natural selection is that affecting normal hæmoglobin and sickle-cell hæmoglobin, controlled by a pair of allelomorphic genes. Homozygotes for the sickle-cell gene mostly die young of anæmia; but heterozygotes are less likely to die of subtertian malaria than are persons homozygous for the normal gene. Hence, under malarious conditions, selection gives rise to an equilibrium between the two genes.

By a study of characters subject to rapid selection, such as the hæmoglobins, of those not quite so rapidly selected, like the *ABO* groups, and of those blood groups which are yet more slowly selected, we may be able to trace relationships between human populations which have existed at varyingly remote times.

Even when allowance is made for the differing extent of our knowledge, there appears to be an increase in complexity in the blood groups as we go from the lower primates to the anthropoid apes, and a great increase as we go from the latter to man. We may perhaps suppose that the critical stage of evolution from ape to man took place in a limited area, and that the blood groups of the evolving race were relatively simple and adapted to the local environment. As man with his newly evolved mental powers gradually covered the Earth, so the blood groups and many other genetical characters have evolved along many different lines to meet the variety of new environments to which adaptation has been necessary.

We cannot doubt that human evolution is still going on, and its study on genetic lines has a great contribution to make to anthropology.

THE MACHINERY OF POSTURE

In his presidential address to Section I (Physiology), Prof. D. Whitteridge remarks that the very great developments in the design of servo-mechanisms during the Second World War have produced attempts to describe the activity of the nervous system in similar terms. These attempts have been resisted by those who hold that such descriptions are either valueless or already well known. One of the most attractive analogies is between head and eyes, and the gun-control platform on a battleship which may carry a telescope for observing enemy aircraft and has to be stabilized against roll and against change of course. If the telescope is stabilized against movement of the ship, the image of enemy aircraft will remain in the visual field and the observer can follow its comparatively slow movements.

It must be admitted at once that Sherrington knew as compensatory reflexes what we might describe as stabilizing reflexes or mechanisms with negative feedback. He emphasized the plasticity of the stretch reflexes of the muscles of the leg by which the weight of the pelvis can be supported in a variety of slightly different positions of the joints of the hind legs. He emphasized the sensitivity of the stretch reflex and the shortness of its latency. Nevertheless, the essential conditions for stability were not explicitly stated.

In the impressive and detailed work of Magnus on righting reflexes, we find much more stress on the presence or absence of these reflexes than on their exact performance. The persistence of righting reflexes after removal of the cerebellum is emphasized; but we have to go to the description of Dusser de Barenne to see how poorly they are then carried out, with tremors and irregular jerks.

The usual teaching is that, in the monkey and man, the labyrinthine mechanisms have become of little importance, and it has been suggested that they are inhibited by the precentral cortex. On the other hand, the reactions of normal human beings to sudden passive movement on the tilt table seem to be carried out by vestibular mechanisms and may have latencies shorter than those of cortical movements. After double labyrinthectomy, patients have 'jumbled vision' during walking or when they are wheeled over rough ground, because voluntary movement of the eyes is too slow to compensate for the passive movement experienced. During rotation of the head about the visual axis in man and the pigeon, the counter rotation of the eyes provides complete compensation; but after the movement is over, the eyes drift back. Clearly the vestibular reactions stabilize the eyes and provide a basis for the operation of fixation reflexes.

Finally, the role of the cerebellum as a stabilizing mechanism received new attention. After its removal, the latency of spinal reactions is unchanged; there are no data on the latency of rapid righting reactions, though they often show serious over-action. There is considerable evidence that the latency of cortical reactions is greatly increased, and correspondingly hopping and placing reactions are slowly and inadequately executed.

The suggestion of a series of stabilizing systems at different levels in the central nervous system cannot be extracted from the older literature, and has some usefulness in predicting and explaining the behaviour of intact organisms.

PSYCHOLOGY AND THE HUMANISTS

The claim that we can have a science of human behaviour has aroused misgivings because of the supposed implications of such a science for everyday life. In discussing these implications, Prof. J. Drever points out in his presidential address to Section J (Psychology), we must not be sidetracked by applications. Some of the latter have obviously questionable features. The refinement of technique in propaganda and advertising is not without danger, nor perhaps should we feel complacent about an educational system which sometimes seems to grade children like eggs or potatoes; but such developments are in the nature of by-products, and it is not with them that we are concerned.