

type with an arboreal ancestry. Non-arboreal and polytocous mammals are excluded; so are birds and other terrestrial vertebrates; so are insects and all other invertebrate groups. No further biological progress is now possible, except in man. Another feature of progress is that characters essential for one progressive advance may be a handicap for later progress. This must be taken into account in planning further progress—that is, in any eugenic scheme.

### The Mapping of our African Colonies

THERE has been talk and correspondence lately on the backwardness of Ordnance Survey revision. Maps and Plans are not kept up-to-date and a great deal of inconvenience has been caused by this fact. It is becoming evident that town planning, building, road programmes and the like make up-to-date maps a necessity and not a luxury. It is not to be wondered at that similar problems have arisen in the African Colonies, the budgets of which have been just as hard hit as that of England. In his presidential address to Section E (Geography), Brigadier H. S. L. Winterbotham deals with this question.

The Ordnance Survey is strictly domestic. It has no duties outside the area for which our own parliamentary estimates are framed. The first step towards colonial mapping and surveying was taken in 1803, when the War Office formed the "Depôt of Military Knowledge" (maps were generally considered "military" in those days). In 1855 Lord Panmure, Secretary of State for War, arranged for a more energetic campaign, and he and the Secretary of State for the Colonies, working together, relied upon the same body, now called the "Topographical Department", to keep in touch with colonial survey departments and to intervene for their assistance, as often as possible. The colonial survey departments are concerned mainly with those property surveys which correspond to the large-scale plans of the Ordnance Survey, and the Topographical Department supplied officers and men for topographical mapping.

This dual arrangement has succeeded in providing a large area of good mapping, but it has failed in these post-War years to secure a proper and progressive programme of triangulation and mapping.

There is no question that comparatively enormous sums of money were squandered in England early in last century for lack of scientific forethought. The expenditure of two million pounds upon the unchecked and uncorrelated tithe maps is a case in point. The Grand Triangulation should, of course, have come first. In India

the question was tackled sensibly and energetically in the correct sequence. In Africa the first essential is an arc of triangulation from Cape Town to Cairo, upon which all other surveys can be hung. Sir David Gill, H.M. Astronomer at the Cape early in this century, made a good beginning, and it was due to his personal foresight and vigour that this arc had reached the southern end of Tanganyika by 1914. Sir Charles Close added a portion in Uganda, and his whole-hearted co-operation as head of the "Geographical Section" (the new title of the Topographical Department) secured the skilled observers for the triangulation, and made it possible to map considerable areas at the same time. Before the Great War, more than 2,000 miles of the arc of triangulation had been finished. In exactly the same period (thirteen years), between 1922 and 1935, only 360 miles were added. In thirteen years before the War, 480,000 square miles were well mapped; in the thirteen years after, no more than 170,000 square miles.

The machinery exists, the problem grows more urgent in proportion as the development of local resources becomes more important. What seems to be lacking is the realization of the ultimate economy and wisdom of tackling the job in the proper sequence. Mapping and development are bound to go hand in hand.

### Problems of Plantation Economy

IN his presidential address to Section F (Economics and Statistics), Dr. C. R. Fay, who has just returned from a visit to the East, discusses the problems of plantation economy with special reference to the tea industry. The evolution of the plantation can be traced from the early tobacco and sugar plantations of North America, through the indigo plantations of nineteenth century India to the tea and rubber plantations of to-day in India, Ceylon and Malaya; and tea can be compared as a commodity with tobacco, sugar, coffee, rubber and forest produce in order to show the scope and method of the plantation form.

The tea estate usually has upon it a tea factory; and thus plantation economy presents two classes of production problems: (a) cultural problems connected with the growing of the leaf; and (b) industrial problems connected with the processing of the leaf into tea. Growing embraces the clearance and planting of the land, the cultivation of the plant and conservation of the soil, the plucking of the leaf. Processing involves the factory sequence of withering, rolling and breaking, fermenting, firing, sifting and packing. In the main, plantations are financed and managed by