

known from surface flaking floors only, except at Dibeira West in Nubia, where there are the relics of a riverside industry at the 40-ft. level, which shows little dissimilarity from that newly discovered south of Edfu. It is an industry of little but microliths. Its cores are of two forms: one, a double-ended type, can be traced through Middle and Lower Sebilian; the other, essentially a neanthropic form, is made from a small elongated pebble, from which the two ends have been removed. Geometric forms are common, but the burin and the "Aurignacian retouch" are absent.

It is evident that the series has little in common with Lower and Middle Sebilian; and Dr. Sandford concludes that notwithstanding the view of M. Vignard, who holds that Middle Sebilian forms lead up to Upper Sebilian, a new and outside influence entered the culture of Egypt in Upper Sebilian times. This he associates with Capsian, holding as a necessary corollary that in Egypt

Mousterian forms and technique lingered late\*.

A point of further interest in connexion with Upper Sebilian and its possible Capsian affinities is suggested by the rock-drawings at Wadi el-Arab and near Abu Simbel which are here described. The oldest of these drawings, depicting giraffes, are compared with the oldest of the series at Uweinat, in the Libyan Desert, in which the Abbé Breuil finds Bushman affinities. This is interesting in view of the fact that our authors would deduce for the earliest of the drawings at Wadi el-Arab a dating which would equate them with the Upper Sebilian.

It remains only to say that an excellent piece of work has been worthily produced by the Oriental Institute, with a selection of well-chosen and admirably reproduced illustrations.

\* For the discussion of a similar problem in an analogous context reference should be made to M. R. Vaufrey's communication on the Capsian in Tunisia in *L'Anthropologie*, 43, 5-6 (see also NATURE, 133, 107, Jan. 20, 1934).

### A New Opportunity for Museums

IF Government museums and a relatively small number of municipal and private museums be set on one side, it may be said that the others have struggled along, many fighting but to retain a place, without much encouragement or help from the public, the education authorities, or indeed from any of those who stand to gain most from the use of museum exhibits. Financial encouragement was lacking, so that collections (often free gifts) could not be properly developed or attractively displayed, but even more disabling was the lack of interest, which tended to drive the curator and his staff (if any) back upon themselves, and to repress efforts and schemes which even a modicum of outside interest would have caused to bud and blossom.

Three years ago an opportunity arose for the bettering of museums through the generosity of the Carnegie United Kingdom Trust, which had been led to see the educational possibilities lying hidden to most eyes in the rich stores of galleries and lockers. Grants were offered for the suitable development of collections from an educative point of view, but the grants were limited to municipal museums and to these in the smaller towns, with populations between 10,000 and 70,000, provided they received a due proportion of financial aid from rates and other local sources.

The restrictions proved to be hampering, and now, at the suggestion of the Museums Association, which has been intimately associated with the scheme in planning and in the allocation of grants, the restrictions are to be modified in the direction of allowing more easy access to grants. The original scheme was planned to run a five years' course; three of the years have passed, and the remaining two years will test the new arrangements.

Put generally, the object of the Carnegie United

Kingdom Trustees is to encourage curators of museums and governing bodies to improve the museum service in their own and in neighbouring areas, and this object is being furthered in two directions, by grants for development and grants for rural service. The grants are no longer confined to municipal museums, nor are they limited to areas falling within definite population limits. They are intended to encourage the working out of any new scheme which will increase the effectiveness of the museum concerned in relation to the community. There are, of course, certain restrictions. It is only fair that the locality should make its contribution, and so no museum need apply unless it receives from rates, income from endowments, or subscriptions, a sum equal to at least threepence a head of the local population. It must have besides (or be about to have) a competent curator, and if the town in which the museum is situated is a large town, the museum must have, in addition, at least one full-time scientific or technical assistant for every 60,000 of the population.

Development grants, which are not meant to be expended on the ordinary running or maintenance costs, but on new endeavours, will not exceed £250 each, and may be considerably less.

Grants for rural service are new, and ought to spread, more than any other effort, an appreciation of museum collections and museum possibilities. The notion, which was effectively illustrated at a special Exhibition of Museum Specimens in the County Hall, London, in 1931, is that the larger museums may well assist rural areas by extending to them the use of loan collections, especially of those circulating loan collections which are adapted by their labelling and by their construction for the use of schools and for safe transport from school to school. To encourage the extension of

such services beyond the boundaries proper of certain urban museums, the Carnegie United Kingdom Trust is prepared to give grants, any one of which is not likely to exceed £200.

The Museums Association is closely identified with the scheme, and applications or enquiries concerning these grants should be made to The Secretary, Museums Association, Chaucer House, Malet Place, London, W.C.1.

We would remind our readers in the Colonies that their museums also stand to benefit from the activities of the Museums Association, for the *Museums Journal* states that the Association is now prepared, through its Empire Secretary, at the above address, to receive applications for grants towards museum developments in the Colonies. These grants will be made from a fund of 54,000 dollars placed at the disposal of the Museums Association by the Carnegie Corporation of New York.

No single grant is likely, in the early stages of this interesting and highly-important experiment, to exceed £1,000, and although no limitations are placed upon the purposes for which a grant may be given, there is an understanding that it will be used towards purely scientific purposes, such as investigation of original collections and publication of results, or towards general museum organisation, such as the employment of expert help in reorganising collections and the purchase of cases for organised collections, or for educational work, on behalf of the people and on

behalf of the curator himself, so that he may learn by visiting the best museums.

Here again there must be some sort of limitation; but the restrictions are very reasonable. No grant will be given to any museum which has not a qualified curator, whether paid or honorary; and no grant will be given to any museum unless there is definite proof that the authorities concerned intend to continue their active support of the institution.

In these provisions for the museums of the British Isles and of the Colonies, museums have placed before them such opportunity as has never before offered, and such as may not offer again. It is for them to show, by the devising of methods of arrangement and exhibition and of peaceful penetration which will create new links of interest between them and the people, that museums can become effective forces for the instruction and intelligent pleasure of the community, so that no man dare ignore their services. When museums have carried their progress so far, the Carnegie United Kingdom Trust can withdraw, having completed its mission; for from that time onwards public authorities will see to it that the museum is retained in its proper place in the framework of education. But if municipalities and museums allow these opportunities to slip through their grasp would the plain man not be justified in thinking (as some think) that many museums ought to take their place on the stage of life beside the "Sleeping Clergyman"? J. R.

### The Engineer and Modern Civilisation\*

By SIR FRANK SMITH, K.C.B., SEC.R.S.

#### REFRIGERATION AND FOOD SUPPLY

TO pass from the prime mover to food, the prime necessity of life, may seem a very big step. Indeed, so far as our food supply is concerned, many may wonder what particularly notable achievements, apart from transport, are to be credited to the engineer.

If we attempt to conjure up a picture of our food supply our view must include not only the produce of our own farms and fisheries, the great wheat fields of Canada, the sheep farms of Australia and New Zealand, the cattle ranches of the Argentine, the orchards of South Africa and other countries, but also the great ships which bring much of the food to our shores, the refrigerated stores in the docks, and in the market, the great chemical factories which turn out fertilisers and the products of a lesser known man who may be described as a biological engineer. To make the picture even more complete we might examine the contents of a grocer's shop with its hundreds of eggs in varying stages of freshness, a portion of Smithfield market with hundreds of carcasses of New Zealand lamb, or even a hawker's barrow on a winter's day crammed with fruit which in

former times would have been regarded as out of season.

To put a quantitative touch to the picture let us examine the returns of the Board of Trade. In 1932, we find that we imported on an average about one million pounds' worth of food every day. Of those eggs in shells which we saw at the grocers' shop we imported 2,000 millions. Those carcasses of lamb we all know come mostly from New Zealand. How many carcasses in all New Zealand sent us in 1932 I do not know, but the value of them was more than seven million pounds, and this represents but a small proportion of our imports of meat, which in 1932 were valued at more than 78 million pounds. What of those apples on the hawker's barrow? If they weigh from 3 to 4 to the lb. it is easy to calculate from the figures given by the Board of Trade that about 3,000 millions were imported; and there were about the same number of oranges.

The people of London could not be fed in this way in olden times. In the summer, food was of good quality and usually plentiful; in the winter it was poor and often scarce; sometimes very scarce; meat and fish were kept by curing with salt, and many vegetables such as carrots and turnips were preserved with honey to form a jam.

\* Continued from p. 129.