

Though we may yet have to wait a little time for cheaper gas and electricity, there is no doubt that much more might be done by the authorities to mitigate the smoke nuisance. We have only to consider the fact that not more than 10 per cent of the local authorities in the United Kingdom administer the law against smoke, and not more than twenty-five authorities have special smoke inspectors.

In conclusion, a word of acknowledgment is due to the London Coal Smoke Abatement Society and the Smoke Abatement League of Great Britain for their praiseworthy and persistent efforts to enlighten the British public on the methods available for the economic and cleanly utilisation of fuel.

J. B. C.

THE SURVEY OF EGYPT.¹

WHERE the region is not too large there is a certain convenience in treating the various branches of study relating to the earth's surface in a single organisation, and in Egypt this arrangement has given good results. The report of the Survey Department on the work done in 1910 has recently appeared, and in the same way as in former years geodetic triangulation and precise levelling furnish the primary control for topographical surveys, cadastral surveys, and to some extent for the geological survey, which has to cover a wider area than that which has been accurately mapped up to the present time.

Astronomical work at Helwan Observatory was carried on regularly, Reynolds's 30-inch reflector being used to expose 249 plates, principally on Halley's comet. The geodetic triangulation has been carried southwards, reconnaissance having reached Tema, about 450 kilometres south of Cairo, while angular measurements and latitude observations were completed as far as Etsa, about halfway. Precise levelling in the delta is nearly complete, and is being pushed on towards Aswan, up the Nile Valley, Assiut having been reached, and a branch line having been carried into the Fayum to the Birket Qurun. The gravity survey of the Nile Valley has been commenced, and observations were being made at a series of stations between Cairo and Khartoum. The magnetic survey of the Nile Valley up to Wadi Halfa was completed, and in 1911 its extension into the Sudan was to be undertaken. Topographical surveying added considerably to the material which is utilised for the publication of maps of the Nile Valley and Delta on 1:50,000 and 1:10,000, and completed the survey of Alexandria town on the scale of 1:1000, that of Cairo being also considerably advanced. The cadastral survey was occupied in the re-survey of Beheira Province, since the original survey was made without any controlling triangulation, and hence left much to be desired. In geology the department's labours were mainly directed to the Red Sea coast, and especially that part lying round about the petroleum region at the south end of the Gulf of Suez, where much accurate surveying, as well as triangulation, was carried out.

Besides the normal series of cadastral maps on the scale of 1:2500, and topographical maps on the scales of 1:10,000 and 1:50,000, others of the whole of Egypt on 1:250,000 are in hand and should soon be published. Their early appearance will be welcomed. The report shows clear evidence of a large amount of work carefully and scientifically controlled, and the report sets an example which might well be more generally followed in showing not only the progress made, but also the rate of work and the cost of work in every branch, as well as the accuracy attained.

H. G. L.

¹ A Report on the Work of the Survey Department in 1910. (Cairo, 1911.) Price £110.

PROMOTION OF RESEARCH BY THE CARNEGIE INSTITUTION OF WASHINGTON.

THE Year Book for 1911 of the Carnegie Institution at Washington has reached us, and is, as usual, full of evidences of unremitting activity in the encouragement of research in science.

The following list shows the departments of investigation to which the larger grants were made by the Trustees of the Institution and the amounts allotted from these grants by the executive committee during the year:—

Department of Botanical Research ...	£ 7,336
Department of Economics and Sociology ...	2,000
Department of Experimental Evolution ...	6,747
Geophysical Laboratory ...	10,896
Department of Historical Research ...	4,700
Department of Marine Biology ...	6,596
Department of Meridian Astrometry ...	6,296
Nutrition Laboratory ...	6,076
Division of Publication ...	1,800
Solar Observatory ...	27,211
Department of Terrestrial Magnetism ...	18,902

£98,560

Numerous minor grants were made amounting to 18,863*l.*, and the grants made to research associates for their investigations amounted to 4840*l.* Grants for publication authorised during the year amounted to 11,200*l.* During the year 1911 the income of the institution was 201,114*l.*, and the expenditure reached 134,320*l.*

The president of the institution, Dr. Robert S. Woodward, says in his *résumé* of the investigations of the year 1911 that it has been, on the whole, the most fruitful year on record for the various specially organised departments of research in the institution. Although some of these are not yet fully equipped, they are all so well organised and provided for that their energies may now be chiefly directed to the attainment of definite results.

Among the more salient aspects of the affairs and researches of the various great departments, the following may be mentioned.

The investigations of the Department of Botanical Research during the year have embraced, among others, studies of the evaporation, the increasing salinity, and the changes in vegetation following close after the receding shores of the Salton Sea; of the influences of temperature, rainfall, sunlight, soil-moisture, &c., on plant organisms; of the effects following transplantation from low to high altitudes and from arid to humid localities; of the variations in water and acid content of plants; of the chemical effects induced in plant tissue by light and heat; and of the physiological functions of leaves in plant life. One of the most interesting investigations under way during the year is that of Dr. Ellsworth Huntington, research associate of the department, on the secular variations of climate of the south-west desert area in recent geologic time. From this work it is believed that some of the salient fluctuations in climate during the past two or three thousand years may be clearly made out. Another noteworthy investigation of the year is that of the respiration of cacti, undertaken by Prof. H. M. Richards in collaboration with the department. This has developed the remarkable fact of a definite diurnal periodicity in the acid content of the sap of the cacti under observation.

One of the most promising investigations of the year in the Department of Experimental Evolution is