Journal of Meteorology

ONE result of the War has been such an increase in the number of meteorologists in the United States that the American Meteorological Society has decided that the moment has arrived when a financial success can be made in America of what is described as "a technical journal of the highest caliber in the field of meteorology". The recently reorganized Society has recognized the need to serve both the professional and amateur meteorologist, and it is for the professional that the new journal under the title *The Journal of Meteorology* is mainly intended (American Meteorological Society, Milton 86, Mass.). It is to be a quarterly journal eventually, but owing to the difficulty of starting a new publication, especially in war-time, it was considered best to have only two issues in the first volume, dated 1944, and the copy of the first issue that we have received, dated September 1944, is accordingly described as vol. 1, Nos. 1 and 2. The journal is edited by Prof. Victor P. Starr, of the University of Chicago, and there are four associate editors, among whom is J. Bjerknes. The print is larger than that usually used in scientific journals at the present time, and both it and the diagrams are very clear; the paper cover is a bright yellowish-orange. There are four articles, dealing respectively with the theory of the genesis and movement of cyclones, the determination of normal regions of atmospheric heating and cooling, the changes of temperature during the formation and dissipation of stratus cloud on the Californian coast, and lastly, the relationship between the major changes in the paths of tropical storms and the upper wind-field. The journal has certainly made a very promising start, and we wish its editors every success.

Planning Regional Electricity

IN devoting its April issue to "Electricity in its Regional Setting" the *Architectural Review* has rendered a real public service. The review of the whole situation, including recent public inquiries at Durham and Lincoln, the work of the Electricity Commissioners, the Central Electricity Board and the newly formed North of Scotland Hydro-Electric Board, which the Association for Planning and Regional Reconstruction has produced for this issue is admirably presented and is not only of particular interest to the scientific worker but also to every citizen concerned with the development of national resources and the preservation of amenities. Taken as a whole, it explores the shallowness of the pretensions of hydro-electric schemes for the Highlands to have anything in common with the ideas and procedure of the Tennessee Valley Authority, and it is strong indictment of the Government's persistent refusal to deal with the question of a real central planning authority.

The survey puts the case for a plan for electricity in its wider regional setting from various points of view and shows how profoundly unsatisfactory is the present situation. There has been no published survey, on the national and on the regional scale, of existing facilities and resources, and there is no evidence that the development of the electricity "Grid" has been anything but piecemeal. No published plan has seriously attempted to link together the ascertained physical facts—mineral resources, rainfall, communications and transport, population, consumption, etc. —with the proposed extensions and development. The Tummel scheme, as Lord Malcolm Douglas-Hamilton shows, is a glaring example of this omission. Again, apart from the national and regional aspects, the siting of both thermal and hydro-electric power stations, their design and appearance has consistently been unintelligent; while finally, the preparation of such schemes in secret and their issue by instalments amounts almost to a deliberate misleading of the public.

Among the articles included in this number is a severe but reasoned criticism of the Central Electricity Board by Mr. Hugh Quigley which shows convincingly the dangers as well as the opportunities inherent in its structure and its lamentable failure to insist on a national approach, to foster research and development and to elaborate a national plan to which all other interests must be subservient. Those by Lord Forrester on "Industry and its Environment", by Dr. E. F. Armstrong on "Electrochemistry and Metallurgy", by Dr. R. Gilmour on "Electrotechnical Industry and the Highlands", by the late Prof. F. C. Baily on "Small Hydro-electric Stations", by Prof. C. H. J. Daysh on "Siting of Industry—The Regional Approach", by J. A. Dempster on "The Design of Industrial Buildings" and by G. A. Jellicoe on "Power Stations in the Landscape" and the anonymous article on "The Load Factor" are of most interest to scientific workers as such; but the whole number is a sombre indictment of the present position and of Government negligence, as well as of the Central Electricity Board or the Electricity Commissioners, which is the more impressive because of the restraint with which the evidence is presented.

Atomic Particles from the Sun

OBSERVATIONS during the solar cycle just completed have shown that a close correlation exists between solar flares—transitory patches of enhanced emission visible in hydrogen and calcium light near spots on the solar disk—and terrestrial magnetic storms. Great magnetic storms and auroral displays tend to occur about a day after the appearance of a brilliant flare, and it has been suggested that they are due to charged particles emitted from the sun simultaneously with the visible radiation. If the geometrical conditions are suitable, it is suggested, these particles begin to reach the earth 20–26 hours later, and cause disturbances of the magnetic traces which may last for a day or more. Nearly twenty years ago, Milne gave theoretical reasons for believing that atomic particles might be ejected from the sun at a speed of about 1,600 km./sec., which corresponds to a time of travel of 26 hours. Soon afterwards, Chapman suggested that a comparison should be made between solar spectra at times of magnetic quiet and of magnetic disturbance. The annual survey of the year's work at Mt. Wilson (Adams, *Pub. Ast. Soc. Pacif.*, **56**, 213; 1944) now states that solar spectrograms taken in the ultra-violet region during magnetic storms give some indication of two very shallow absorption bands beginning near the centre of the lines H and K and extending about 12 A. towards shorter wave-lengths. Their maximum depth is only 1 per cent of the background continuum. Maximum velocities of the order of 1,000 km./sec. and mean velocities of about 600 km./sec. are indicated. Control spectrograms taken during magnetic calm show no such absorption. This is the first direct observational evidence of the presence in interplanetary space of calcium ions approaching the earth from the sun at speeds comparable with those predicted both theoretically and by inference from geophysical observations.