difficult to see how this can be done equitably. The amalgamation of undertakings into a smaller number of larger undertakings is an important step towards standardization of methods of charging and more uniform prices. The Minister of Transport should be empowered to require all undertakers to offer an improved statutory two-part tariff for domestic supplies, as an optional alternative to a flat-rate charge. The fixed charge under an approved two-part tariff should be based either on the floor area of the house or on its rateable value, and all undertakers should be required to publish the actual scale of fixed charges under their two-part tariff. If these suggestions were adopted there should result a general, though necessarily gradual, reduction in costs. Amongst other recommendations, it is suggested that where gas and electricity undertakings are left under the joint ownership of a local authority, it would assist in the more rapid development of the electricity undertaking if the authority were required to have separate committees. Evidence was given which showed that restrictions had been imposed on the development of the electrical undertaking in order to prevent the financial position of the gas undertaking from being adversely affected. Both public activities should be equally untrammelled.

Meteorology in India

IN the Report on the Administration of the Meteorological Department of the Government of India in 1934–35 (Delhi: Manager of Publications, 1935), an account is given of an important change in the arrangements for dealing with the increasing meteorological requirements of aviation along the trans-India air route. In previous years, a separate forecast had been issued to each aircraft in respect of the route covered by it each day from the forecasting centre concerned; but it became evident that it would soon be impossible for the two centres at Karachi and Calcutta to continue to do this for the four thousand miles of the route between Bahrein and Victoria Point. Arrangements were therefore made to broadcast forecasts for each section of the route regularly at fixed times, and to distribute data relating to upper winds and cloud height by wireless from pilot balloon stations along the trans-India route twice daily. The Agricultural Meteorology Branch carried out a number of researches, mainly at the Central Agricultural Meteorological Observatory, Poona; instruments for the study of microclimatology were designed and tested, and a number of papers were written dealing with the correlation between meteorological conditions in the open and among growing crops; researches into evaporation, percolation and effective rainfall were also made. Experiments on the effect on soil temperature of a thin covering of soil of different colours and from different districts showed that coverings of certain soils had a big effect on the climate of the soil beneath. Other investigations were made into the albedo of different types of soil and vegetation. The scheme of crop-weather precision observations was applied to wheat and jowar at Poona, to rice at Karjat and to bajri at Baroda. The study of frost damage and methods of preventing it was also included in this branch's activities. The Upper Air Observatory at Agra released seventy-seven sounding balloons with recording instruments, and nearly half of these were recovered.

Physiology of Indian Crop Plants

FOR some time past, the staff of the Institute of Agricultural Research of the Benares Hindu University has been engaged, under the leadership of Prof. B. N. Singh, in detailed and comparative studies of the physiology of Indian crop plants. A considerable number of publications on this subject has now been issued, mainly in the *Proceedings of the Indian Academy of Sciences*, and good progress has evidently been made in a highly interesting and important field of work. The most extensive work completed is that dealing with photosynthesis under different conditions of light, temperature and carbon dioxide supply. Since a large part of previous research on this subject has been carried out in temperate climates, it will be obvious that detailed studies of tropical plants are likely to be of considerable value. One striking result of this work is that tropical plants are found to have a higher light requirement in photosynthesis than similar species grown under temperate climatic conditions. Another especially interesting problem under investigation is that of the differences in respiration rate found to exist in plants differing in their duration of life. Short-lived plants are apparently characterised by a low respiration rate, which also falls off very rapidly as the age of the plant increases. Long-lived plants, on the other hand, not only have a high respiration rate but also are able to maintain this higher rate throughout life. Other subjects under investigation by comparative methods include the water requirements of seeds possessing different structural and biochemical properties, and the effects on plant growth of irradiating seeds with X-rays.

Electricity in Horticulture

ELECTRO-CULTURE has to take into account the effects of electric heating, electric lighting and the voltage stress on the life of plants. The first application of electricity took the form of high-voltage discharges produced in close proximity to various plants in an endeavour to obtain artificial stimulation. In the Engineering Supplement for May of *Siemens Magazine*, a survey is given of recent developments, and the photographs shown of the effects produced are convincing. It has often been noticed that an increased growth of crops sometimes occurs during thundery weather. In the Arctic, where the average atmospheric potential gradient is high, it has been observed that the growth of vegetation during the short summer is more vigorous than in southern climates. Experiments have been carried out on cereals, potatoes, beets, tomatoes, strawberries and raspberries, and increases up to forty per cent have been obtained. Electricity in the form of light was the next application in the aid of horticulture. For vigorous plant growth a minimum of about 4 hours