

through boiling has been proved by recent experiments to be negligible. Where it is impracticable to boil instruments immediately prior to use, they may be stored in a dry state in a covered sterile receptacle instead of in spirit, or, alternatively, in a watery antiseptic solution to which a small amount of borax should be added to prevent rust. Such articles as hypodermic syringes and needles might still be stored in spirit since only a small quantity is needed. If alcohol is used in drying the hands of surgeons it could be applied economically, but adequately, by the use of a spray after the hands have been thoroughly washed and dried with a small sterile towel. Instead of using tincture of iodine for the patient's skin before operation, the area of the operation could be painted with a watery solution of iodine or of one or other of the antiseptic dyes. For swabbing the suture line when stitches are removed after a clean operation, the application of sulphani- amide powder can be recommended in suitable cases, or failing that an antiseptic soap may be used. For treating the backs of bedridden patients an effective method is light massage with zinc oxide and castor oil after the skin has been washed and thoroughly dried; in a small number of clinical conditions, however, the use of spirit for this purpose would be still desirable. More complete instructions will be given, no doubt, when the recommendations are issued.

### *Electronic Engineering*

DURING the past quarter of a century, a prodigious advance has taken place in the development and application of devices utilizing free electrons, either alone or in association with positive ions, including the wide variety of radio valves, gas-filled rectifiers and cathode ray tubes, as used nowadays in communication and electrical engineering. Technical progress in this subject has hitherto been recorded as an important and ever-growing side-line in journals otherwise devoted mainly to radio communication and television, or to electrical engineering in general. As from the June issue, the Hulton Press, Ltd., has incorporated its previous monthly publication entitled *Electronics, Television and Short-Wave World* in a new periodical named *Electronic Engineering*, which is to be of such a scope as to cover the whole field of research and application of electronic devices in general.

The new journal will provide all those engaged in research and industry in this subject with a medium for interchanging ideas and learning the progress which is being made in all parts of the world. Original articles by specialists will appear regularly, and special features will include patent abstracts, reviews of books and instruments and novel circuit arrangements. An important feature, which may be expected to contribute notably to the success of the new periodical, is that Mr. G. Parr, who has been appointed editor, has been closely associated with the electrical and radio industry for more than twenty years. He is the author of a book on the cathode ray tube, and has played an important part in demonstrating the

versatility of these tubes as recording and measuring instruments for laboratory and other purposes. The June issue of the journal contains the first of a series of data sheets for the use of design engineers, as well as articles on amplifiers, oscillation generators, quartz crystals and other audio- and radio-frequency problems of current interest.

### **Cancer and Occupation in Denmark**

In a paper on this subject read before the Danish Medical Society on November 5, 1940 (*Nordisk Med.*, 9, 869; 1941), Dr. Johannes Clemmesen, of Copenhagen, maintains that cancer research has lost contact with practical medicine and that the etiology of the disease is almost exclusively studied in laboratories, while clinical mass observations are far too uncommon. The following results were obtained by him on examination of the mortality from cancer among males in various occupations in Denmark during the period 1935-1939. In agriculture and similar occupations deaths from cancer in the age-group 45-64 were fewer than would be expected from the average of cancer deaths among the population as a whole. In industry the cancer mortality was higher than the average in accordance with the higher mortality from all causes for this group. After the sixty-fifth year the cancer mortality was the same for all occupations, but the localization varied in the different occupational groups. The cancer mortality among males and females in Denmark showed the following characteristics. In the age-groups 25-44 and 45-64 it was highest among females. In the older age-groups it was highest among males, but this excess for males was highest in Copenhagen, less in the provincial towns and not definite in the rural areas. The total cancer mortality was also highest in the capital, probably owing to the lower mortality from that cause in the agricultural than in the industrial group.

### **Excavation of Growing Trees with Earth**

FOR purely horticultural purposes it is often required to remove trees and shrubs with a ball of earth for transference elsewhere, and considerable care and ingenuity must be exercised if success is to be achieved. Mr. F. A. F. Schmid and Mr. F. J. Nutman, of the East African Agricultural Research Station, Amani, Tanganyika Territory, have described (*Soil Science*, 49, No. 6; June 1940) a method devised by them during research on the water relations of coffee, for which they required large plants several years in age which could only be obtained in the field. The authors state that by their method a growing tree together with about two tons of soil has been successfully transplanted, and that only the outbreak of war has prevented further excavations. There appears, it is said, to be no limit to the size of the soil block that can be isolated in this fashion save only the size of the vehicle available for transport.

Their work was done in a district with a very light, friable, volcanic ash soil, with few stones. It is admitted that the presence of stones might make

this method difficult if not impossible. The apparatus required is simple. The method consists of the preparation, by mechanical means, of an accurately cone-shaped pillar of soil, of a known and definite angle, of the fitting to this pillar of a metal container designed to have the same angle, and of the undercutting and removal of the soil block. Since the container fits the block exactly, and since the lift is *via* the sides, the authors state, of the cone-shaped receptacle, no soil disturbance is possible. The paper, with diagrams, explains the method in full.

### Hygiene of the Garden

D. E. GREEN has seized the opportunity of wartime need to survey those plant diseases which are transmitted or aggravated by lack of hygiene in the garden (*J. Roy. Hort. Soc.*, 66, Parts 1-5, Jan.-May, 1941). This series of papers focuses attention upon the simplest and most economical methods of combating plant maladies, namely, by removing sources of infection and contributory causes. Incomplete removal of diseased material from previously infected crops, the presence of uncontrolled rubbish heaps, the use of contaminated soil for composts, sowing disease-bearing seed, unskilful watering, unbalanced manuring, and even undue handling of the plants by the gardener are all potent factors in the relative incidence of parasitic fungi. The list of diseases which are subject to hygienic control is an impressive one, and includes club root, several root-rots, footrots and damping-off, many virus diseases, leaf spots and rusts; in fact, all diseases should in some measure be subject to this form of control. Mr. Green describes numerous maladies with the help of excellent photographs, and it is difficult to escape the conclusion that phytopathologists and gardeners should direct far more attention to this efficient but unspectacular method of raising healthy plants.

### The British Ecological Society

REFERRING to the note in NATURE of May 31, p. 669, on his award of the Linnean Gold Medal Prof. A. G. Tansley writes: "In the notice of my work which appeared in NATURE of May 31 there is a small error which should, I think, be corrected. It is stated that in 1917 I took over 'the secretary's work and editorship of the Society's *Journal*'. It was not I, but Dr. (now Prof.) E. J. Salisbury, who became secretary of the British Ecological Society in the autumn of 1916, and he held the post until 1932. The guidance of the Society through the critical years of its development was thus shared by the two of us."

### The Ray Society

THE annual general meeting of the Ray Society having been omitted for the current year, with the consent of the members, the present officers and council will remain in office, with the exceptions that Dr. E. S. Russell, president of the Linnean Society, has been co-opted as a vice-president and Dr. Stanley Kemp as a member of council. In the annual report,

which has just been circulated, the Council states that the accounts show a much more satisfactory state of affairs than might have been anticipated under war conditions. The second volume of Dr. Bristowe's work "The Comity of Spiders" is nearly ready for publication. A volume on "The Larvæ of Decapod Crustacea" by Dr. Robert Gurney is in the printers' hands and will form the issue to subscribers for 1941. The Council will be glad to consider suitable works for early publication. Authors are requested to communicate with the secretary of the Society. The official address of the Society remains "c/o The British Museum (Natural History), Cromwell Road, London, S.W.7", but personal communications for the Secretary should be addressed to Dr. W. T. Calman, "Willowbrae", Tayport, Fife.

### Automatic Equipment in Trunk Telephone Working

UNTIL a few years ago, practically all trunk telephone working was done on a delay basis. The principle involved an extravagant method of operating, namely, the segregation of trunk mains into small groups, each of which was controlled by a telephonist. In the Engineering Supplement to the *Siemens Magazine* of March, Mr. H. E. Humphries gives an instructive discussion of the whole subject, laying stress on automatic equipment as an aid to trunk switching. With such an aid, a telephonist can occupy her time fully with other switching duties during a waiting period, and need concern herself with a waiting call only after receiving a signal that a free trunk is available. Remotely controlled automatic switches provide the telephonist with access to a multitude of all trunks. An analysing device in the automatic unit automatically determines which course should be followed. The telephonist leaves the circuit in this waiting condition and proceeds with other work, the supervisory lamp on the trunk side of the connexion giving a fleeting signal every six seconds to remind her that there is a call awaiting completion.

An automatic trunk exchange initially costs more than its manual counterpart, and the natural question arising is whether or not the additional expense of automatic working is a sound investment. Mr. Humphries states that the normal busy-hour load on the Capetown Trunk Exchange demand suite is approximately thirty-six calls per position. This figure is appreciably higher than any equivalent operating procedure could produce on a manual system. Another way of viewing the matter is that an automatic system, with its increased facilities, gives a better and faster service, which is the first necessary step of any administration towards active development of its trunk system.

### Meteor Observations in India during 1940

MOHD. A. R. KHAN, of Begumpet, Deccan, who has communicated the results of his observations of meteors for several years to NATURE, has sent an account of his observations during 1940. From this it appears that during the year a total watch of 103½ hours was maintained on 152 nights and the