human carriers. . . ." Careful investigation of a small outbreak of the disease in a Chicago suburb last summer revealed a striking example of spread by carriers.[4] Furthermore, poliomyelitis has long been reported to occur in the winter, although the virus had not been isolated from winter cases. In recent weeks we have been able to convince ourselves of the existence of winter poliomyelitis by isolating the virus from the stools of one paralytic and one non-paralytic case in Cincinnati in the middle of January, as well as from an apparently healthy younger sibling of each of these patients. Professor Brues is especially inclined to throw suspicion on rats because as he says "the virus can now readily be propagated in certain rodents. . . ." While it is true that Armstrong established *a* strain of poliomyelitis virus in cotton rats and mice in 1939, it is unfortunately not true for numerous strains of virus of human or recent human origin which have been tested in rats and mice since that time. The virus of "spontaneous poliomyelitis" of mice (Theiler's virus) may be pathogenic for cotton rats but is without effect in monkeys.[5] And one of the criteria which we and others have found applicable to the large numbers of poliomyelitis strains that have been isolated from human beings and flies is that while producing paralysis in monkeys they are not pathogenic for mice, guinea pigs and rabbits.

We believe that the search for a reservoir of poliomyelitis virus among lower animals is worth while and should continue. It is also evident, however, that epidemiologically poliomyelitis seems more to resemble diseases like typhoid fever and dysentery in which the chief reservoir of infection is in human excreta and both direct and insect spread may be possible, rather than some or all of the summer encephalitides where the chief reservoir appears to be in lower animals with spread occurring by means of a specific insect (mosquito) vector. Having isolated the virus from winter cases, we are inclined to regard poliomyelitis as a disease which occurs the year round but has a greater incidence during the summer and autumn because greater dissemination of the virus may be made possible by a number of factors, including insects such as flies.

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PLAGIOTROPIC HABIT OF GROWTH IN NORWAY SPRUCE

LATERAL twigs from the lower branches of Norway spruce trees when used as cuttings yield some rooted cuttings with the new terminal shoot developing at an angle from the vertical. This plagiotropic habit of growth if persistent would be highly undesirable for forest planting stock. Observations of this feature have been made in connection with studies[1, 2] of the vegetative propagation of Norway spruce trees during the past three years.

In one collection of 650 cuttings from trees 26 years old plagiotropic growth was evident in 19.4 per cent. of the cuttings three months after planting. In another collection of 600 cuttings from trees 40 years old plagiotropic growth occurred to the extent of 14.4 per cent. Some of the rooted cuttings were planted outside in a nursery, while others were potted and grown in a greenhouse.

By the end of the first growing season the plagiotropic habit of growth was less evident than earlier. With maturation of the stem tissues a number of the terminal shoots which had been but slightly plagiotropic earlier now assumed a vertical or almost vertical position. This is similar to the growth habit of a lateral shoot of the terminal whorl of a conifer whose leading shoot has been injured or removed. The plagiotropic habit was maintained by some of the shoots throughout the first year but gave way to normal vertical orientation of the terminal shoot in the second year. The habit of growth of the terminal shoots of the trees during the third year was normal and indicates that subsequent growth will be normal. It is believed that an early expression of plagiotropic growth in some rooted cuttings of Norway spruce does not offer a serious objection to the employment of vegetative reproduction of this species.

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A SIMPLE AIR-RAID ALARM

A SIMPLE air-raid alarm system has been developed and installed by the Cranbrook Institute of Science, which would be suited to many other buildings, particularly those already equipped with public-address systems.

A switch and radio volume control unit are placed near the telephone switchboard, over which warnings would be received. The unit controls a bank of radio amplification tubes, which build up the unholy noise of a tone-oscillator tube, the wail of which is controlled by the operator in accordance with the official fluctuating two-minute warning or the steady "all clear" signal. The sound is broadcast through eight-

[4] E. A. Piszczek, H. J. Shaughnessy, J. Zichis and S. O. Levinson, *Jour. Am. Med. Asn.*, 117: 1962, 1941.
[5] M. Theiler, *Medicine*, 20: 443, 1941; P. K. Olitsky, *Proc. Soc. Exp. Biol. and Med.*, 45: 339, 1940.

[1] C. G. Deuber and J. L. Farrar, SCIENCE, 90: 109–110, 1939.
[2] C. G. Deuber, *Trans. Connecticut Acad. Arts and Sci.*, 34: 1–83, 1940.

inch permanent-magnet speakers, but two of which were required for our building of five floors. The cost of equipment was approximately $25.00.

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ENTOMOLOGY AND WARFARE

A YOUNG friend of mine, a keen student of insects, has recently been taken over by the military authorities as an entomologist. He does not know where he will be sent or did not when I talked with him, but he has a keen sense of the possibilities of such a position, and is very enthusiastic about it. Years ago, I met Sir David Bruce in Madeira, and he commented on the great opportunities for work connected with the transmission of disease in the tropics and the unwillingness or inability of most resident medical officers to take up this work, in addition to their regular duties. If our military authorities are now establishing entomological units, with trained workers, in all the places where our troops are stationed in the tropics, the results will certainly be of great importance. Sickness and death will be prevented, and information will be obtained which will be of value in times of peace.

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QUOTATIONS

IMPACTS OF THE WAR ON AGRICULTURAL SCIENCE AS INDICATED BY THE DECEMBER SOCIETY MEETINGS

So many of the scientific societies of agricultural interest hold their annual meetings in late December that this period normally assembles more research workers in agriculture than any other of the year. For this reason these gatherings furnish an unusual opportunity to obtain a cross section of current thought and trends in some of the most important fields. In this respect, the 1941 meetings were no exception. Although formulation of their programs was well advanced before Pearl Harbor, the war and its impacts inevitably permeated whatever was said and done.

Three main groups of these meetings were attended by representatives of the Office of Experiment Stations. The largest in point of numbers and constituent bodies was that at Dallas, Texas, centering around the American Association for the Advancement of Science and including among others the American Phytopathological Society, the Society for Horticultural Science, the Society of Plant Physiologists and the Mycological Society, the Genetics Society and the Potato Association of America. A second group was that of nation-wide social science societies, held in New York City and including among others the American Farm Management Association and the Rural Sociological Society of America. The third was held in San Francisco and included the American Association of Economic Entomologists and the Entomological Society of America. All these groups were largely attended, and there was the customary substantial representation from the Federal Department of Agriculture and the land-grant colleges and experiment stations.

One of the organizations giving special attention to the war situation was the American Phytopathological Society. This society scheduled a panel discussion, sponsored by its extension work and relations committee and having as its topic for discussion Plant Pathology in Relation to National Defense and Post-War Readjustments. The meeting was opened by Director C. R. Orton, of West Virginia, who took up the national emergency programs as to crop production and garden goals and set forth the plant disease program involved. Other speakers drew attention to the opportunity for increased service to Latin America, the fungicide and spray machinery situation and the need of better transmission of research findings to the farm. On this last point, it was stated that less than half the states now have extension plant pathologists. In an attempt to remedy some of the difficulties in this direction, a group of southern plant pathologists set aside their original program for a special conference to consider what they might do of a war-time value and formulated simple, specific directions for the control of tomato wilt, sweet-potato wilt and other *Fusarium* wilts of southern crops.

The society as a whole voted to affiliate with the American Society of Agricultural Sciences. Thereby it became the first society in this country to effect association with this good-neighbor group established to promote helpful relationships among the agricultural scientists of the American Republics.

Probably the most significant action of the phytopathologists was their formation of a war emergency committee, consisting of their retiring president, Dr. J. G. Leach, of West Virginia; Dr. E. C. Stakman, of Minnesota; Dr. R. P. White, formerly of the New Jersey Stations; and their newly elected president, Dr. L. M. Hutchins, of the U. S. D. A. Bureau of Plant Industry. Regional representatives for the New England, Middle Atlantic, Southern, Upper Mississippi Valley and Pacific Divisions and representatives for plant quarantine, research, extension and fungicide manufacture were also designated. A ten-