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.