RAYs, RODs AND BOXES

THE Royal Netherlands Academy of Science has recently published a report* which reveals a curious state of affairs. In 1920 a German, Freiherr von Pohl, propounded the theory that certain rays emanate from the Earth which are injurious to the health of man, of most animals, and of plants. He followed this with the publication of a book in 1932 entitled "Earth Rays as the Causes of Disease", in which the use of the divining rod is recommended for detecting the presence of such rays. Credence was given to his theory by an astonishing number of people, particularly in Germany, Switzerland and the Netherlands, although neither von Pohl nor his later followers ever gave any proof of the existence or nature of such rays.

Spread of the belief, however, gave scope for the activities of large numbers of diviners, professional and otherwise. They appeared mostly to act in good faith, although one feels that the lady who claimed for her divining rod the ability not only to detect the presence of earth rays, but also to extract them from the ground and deposit them in a ditch or rubbish heap, all for the payment of £13 per acre, was making rather a good thing out of her neighbours' troubles. The next development was that ingenious persons devised apparatus claiming to protect men, animals and plants from the evil effects of the rays. The rays themselves being purely hypothetical, the construction of the apparatus was necessarily 'intuitive', and many different types have therefore been put on the market at prices ranging from 100 to 500 florins (£9 to £45), being as high in some cases as 1,200 florins (£108). For the most part they are wooden boxes, with amazingly variable contents. Purchasers are advised not to open the boxes for fear of impairing their efficacy, and those who have had the courage to ignore this advice have found (in a Swiss example) a small bottle of ink, in another case a piece of lead nailed to the bottom of the box, in yet another some salad oil, in several cases little metal wheels and plates or spools of wire flex and switches to give an impression of dealing with magnetism or electricity. Some apparatus is provided with a compass, the needle of which must point in a certain direction. It has been known for apparatus of this kind to be patented, but not in the Netherlands, where thorough testing has to precede the granting of a patent. The apparatus containing simply a piece of lead had been supplied as a cure for rheumatism, and was later the subject of a court action.

In the Netherlands, agriculture was at first unaffected by von Pohl's theory, until about ten years ago intensive propaganda on the part of the diviners proclaimed the efficiency of the protective boxes for controlling animal and plant disease. The propaganda was so successful, especially in Friesland and the horticultural region of South Holland, that uneasiness was felt in scientific circles, and in 1948 the Royal Netherlands Academy of Science appointed a commission to investigate the whole problem under the chairmanship of Dr. J. Clay, at that time professor of natural philosophy in the University of Amsterdam. The commission created first a group to

deal with the physical aspects of the problem, and then, in 1952, a second working group to deal with agricultural aspects. The chairman of the agricultural group was Dr. A. J. P. Oort, professor of plant pathology in the Agricultural University, Wageningen, and the secretary was Dr. C. K. van Daalen, formerly inspector of agricultural research, Bilt-hoven. Other members were Dr. J. van der Grint, physiologist, Hoorn; Ir. S. F. Kuipers, advisory officer for soils and fertilizers, Wageningen; Dr. F. W. G. Pijls, horticultural advisory officer for soils, Wageningen; and Dr. D. A. Vries, of the Physics Laboratory, Agricultural University, Wageningen. A third working group was appointed under the leadership of Dr. F. A. Heyn at Delft to study psychic aspects of the problem. The three groups worked independently of each other, but arrived at the same conclusions. The report described here is that of the agricultural group, whose terms of reference were to determine (a) whether 'earth rays' exercise an unfavourable influence upon health, growth and productivity in animals and plants, and (b) whether these evils can be controlled by the use of 'protective apparatus'.

Investigations were made with the aid of twelve diviners, most of them professionals, who, in detecting earth ray courses or spots, also indicated whether they considered the irradiation to be faint, moderate, fairly strong, strong, or very strong. Even faint irradiation was considered to be injurious. The investigations, of which a full account is given, were made in various parts of the Netherlands and were concerned with the stabling of cattle and horses; with disease in cattle and horses; with productivity in honey bees; with plant disease, namely, potato wilt, beet disease caused by *Heterodera schachtii*, flax burn; pea disease caused by *Fusarium oxysporum pisi*; potato leaf roll and disease caused by *Phytophthora*; and *Botrytis* on flax; with weed control; with the control of supposedly irradiated spots in pastures for horses; and with the quality of silage.

In all these investigations it was found that there was absolutely no agreement between the findings of the different diviners examining one and the same object; nor was there any agreement between the findings of any one diviner who repeated his examination of an object. Totally different courses or spots were indicated. Again, there was no connexion between the indications of the diviners, jointly or individually, with the disease occurring in animals or plants. The protective apparatus tested had no effect on the development, health and productivity of the animals and plants observed: disease was neither removed nor diminished. Although the existence or otherwise of 'earth rays' was not included in the group's terms of reference, its members have felt bound to point out that the results of their investigations are in direct conflict with von Pohl's 'earth ray' theory. There is no value whatever in the examination by diviners of places for the rearing of animals or the growing of plants, nor is there any in the use of the so-called protective apparatus.

The report includes interesting chapters on the part played in divining by suggestion and auto-suggestion, and on findings from other countries which confirm the authors' conclusions.

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