

FIFTY YEARS AGO...

The theories associated with continental drift have now been well established and geophysicists are now concerned with detail. Fifty years ago the theories, as postulated by WEGENER, were still open for far reaching discussions as this paper by Professor F.A. WENING MEINESZ published in the IHR, Vol. XVII, No. 1, May 1940 clearly demonstrates.

THE WEGENER THEORY

(Translated from an article in the *Tijdschrift van het Kon. Nederl. Aardrijkskundig Genootschap*, Amsterdam, July 1939, pages 453-457.)

'In view of the great interest manifested in the Wegener Theory, the author of the present article has revised the text of a lecture given at Utrecht before the Geographical Society on the 30th January 1939, in order to present a brief summary of the present state of the problem. It does not presume to open up new horizons on this subject.

The Wegener Theory has several aspects: geological, geophysical, climatological and zoological — from this the difficulty of approaching it and making a critique. In what follows, we shall, nevertheless, examine only the geophysical and geological aspects.

We are still not in a position to pass a well-founded judgment on this theory. Much more research will be necessary before any degree of certainty can be reached on this subject, both in the positive and the negative senses. In any case, Wegener deserves high praise for his clear and comprehensive vision of the problems which are associated with his theory, shedding much light on all that is favourable to it, while that which cannot be incorporated in it has been left more or less in the background. Besides *Wegener*, who published his theory in 1912, one should name *Taylor* in 1908, and *Baker* in 1911, both of whom were advocates of a theory of continental drift.

There is general agreement on one point, namely: that the continents are rigid carapaces of sial which drift on the sima. According to JEFFREYS, the layer of sial is composed of granite to a depth of 10 kilometers, with an intermediate layer called tachylite below it. The combined layers reach a depth of 30 to 50 kilometres. According to him the layer of sima is composed of dunite. *Holmes* is of the opinion that the intermediate layer is composed of diorite and the sima of eclogite. The gravity investigations have shown that, in an approximate manner at least, the layer of sial is in isostatic equilibrium, and this has incited WEGENER to consider all vertical movements in the terrestrial crust as impossible; and, in consequence, he does not accept the effacement of the ancient land bridges (*land-bruggen*). Since then, more recent gravimetric research has shown that there is no reason for such conception and that such vertical movements in the earth's crust are, after all, perfectly possible.'