Evidence for a similar additivity is now available for the third of the three reactions, the alkaline hydrolysis of ethyl benzoates. Some twenty-five disubstituted esters have been examined, and the agreement between the values of the energy of activation obtained from the values of log k and those predicted on the assumption of a strictly additive relationship shows the same degree of correspondence as that obtained in the benzoylation of disubstituted anilines.

A full account of this investigation will be published elsewhere.

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[1] Jones, Brynmor, *J. Chem. Soc.*, 418, 676 (1942); cf. also *J. Chem. Soc.*, 1006 (1928), 1831 *et seq.* (1935).
[2] Williams and Hinshelwood, *J. Chem. Soc.*, 1079 (1934).
[3] Ingold and Nathan, *J. Chem. Soc.*, 222 (1936). Evans, Gordon and Watson, *J. Chem. Soc.*, 1430 (1937).
[4] Stubbs and Hinshelwood, *J. Chem. Soc.*, *S* 71 (1949).

Geological Age of Meteorites

In a recently published survey of radiochemical and astronomical results on the age of the universe, the late Prof. R. C. Tolman[1] referred to the "surprisingly wide range of values" found by us[2] for the dates of solidification of meteoritic material. To other competent reviewers this range has appeared equally "perplexing"[3]; but even under the assumption that all meteorites are fragments of one planet, which, after its disintegration, have never been modified by a close approach to the sun, there seems to be no valid reason for the expectation that the ages of all of them should be of the same order.

While it is generally known that the rocks of the earth's surface belong to very different geological periods, there always was, and still is, a tendency among scientific men to picture the formation of the three main layers (core, mantle and crust) of any terrestrial planet as the result of a simple physico-chemical separation, completed in one process at a fairly early stage of its development, under conditions of thermodynamic equilibrium[4]; but the study of many meteorites shows clearly that they have undergone repeated disruption and conglomeration and alternate heating and cooling. The mechanism and duration of these processes are still unknown, but they must have delayed the final solidification of some meteorites.

We are at present engaged in an extension of our meteorite studies. The new results may alter somewhat the earlier figures; but it seems improbable that they will indicate anything like a uniform age of all meteorites. There are no fossils in meteorites to guide us; but we believe that the wide range of ages found by the helium method for meteorites is the first indication of different geological periods in the history of their parent planet.

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[1] Tolman, R. C., *Rev. Mod. Phys.*, **21**, 374 (1949).
[2] Arrol, W. J., Jacobi, R. B., and Paneth, F. A., *Nature*, **149**, 235 (1942).
[3] Watson, Fletcher J., "Between the Planets", 200 (Philadelphia, 1941).
[4] Brown, Harrison, and Patterson, Claire, *J. Geol.*, **56**, 85 (1948). See the criticism of the thermodynamical part of this paper by Klotz, I. M., *Science*, **109**, 248 (1949).

An Alternative to Latin Diagnoses

The International Rules of Botanical Nomenclature call for the diagnoses of new species and other groupings of plants to be given in Latin. In so far as the algæ are concerned this is to be regretted. From Latin diagnoses it is often impossible to obtain a clear description of the alga concerned or to distinguish it from one or more closely allied species. This is in part due to the impossibility of rendering, in Latin, the finer shades of meaning that can, for example, be expressed in French, German or English.

In Great Britain, at least, there are few men of science with a deep knowledge of Latin. Commonly, assistance has to be obtained in making Latin diagnoses or, what is worse, someone other than the author translates them. The translator may well neither be an algologist nor even a botanist. Even those proficient in Latin say it is not always possible to make an accurate rendering of all the terms used, nor can their readiness to assist be imposed upon too frequently.

It is said that, if diagnoses in other scientifically international languages are permitted, some biologists will take objection to and fail to use the languages chosen. This is, however, scarcely different from the present position when many hundreds of species of freshwater algæ are not diagnosed in Latin. Officially none is valid; but is anyone going to suggest that re-diagnosis in Latin will be other than a waste of time and paper? We even reach the absurd position where authors give shortened diagnoses in Latin "to comply with the International Rules". If my suggestion were adopted, every algologist would be able to render one of the two diagnoses called for in his own language. Zoologists have long given up Latin diagnoses and have not found it necessary to return to them. Since many algæ are included in both the animal and plant kingdom it seems particularly appropriate that the rule should be altered for this group. It appears that taxonomists of the higher groups of plants are firmly wedded to Latin diagnoses; but it may be hoped that a special ruling can be made for algologists at the forthcoming International Congress in Sweden, and a proposal has been submitted with this end in view.

The suggestion is that the second language in which the diagnoses is given should be French, German or English. Every taxonomist must be able to read these three languages, in which, moreover, the finer shades of meaning can be adequately expressed. Above all, it should be compulsory to give an illustration and the pertinent dimensions.

The suggested rule is therefore as follows. The diagnoses of all algal varieties, species, genera or higher classificatory groupings shall be given in two languages, one of which shall be French, German or English. The diagnoses shall be accompanied by an adequate illustration or illustrations and by the pertinent dimensions.

I should be glad to have the opinions of botanists on this matter and any suggestions for a more suitable wording of the rule.

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