

empirical method in other fields will not object to Prof. Toynbee for using it in the study of human history.

Since the "Study" is not yet complete, a final appraisal is not now possible. Some of its central propositions are, however, sufficiently apparent. Prof. Toynbee regards civilisations as plural and not singular—an opinion which, though fundamental to the entire work, will certainly excite much criticism. Given the facts, which he sets forth very fairly, many readers indeed will agree with him, and will reject the technique of those schools of historians who attempt to cram into the crannies of a single *a priori* mould the infinite complications of civilised history. On the other hand, Prof. Toynbee's argument equally implies that the life-histories of civilisations contain recurring and significant regularities, an inference which will also be challenged by the different school which regards history as altogether patternless. Recurrence and significance, however, are largely questions of the scale, framework, and concepts of study; and if it be granted that civilisations are plural, if civilised societies as a

species can be distinguished from primitive societies by their common features of size, longevity and rareness, and if some of the civilisations which have been born have also died, then negatively there can be no *a priori* reason why significant regularities should not recur, while positively Prof. Toynbee's *a posteriori* conclusions as regards birth and growth, the only portions of his subject so far studied in detail, certainly ring too true to common experience to be dismissed out of hand.

A book is more than the facts and arguments it contains; and no sympathetic reader can rise from Prof. Toynbee's "Study" without paying tribute to the vitality, imagination, and generosity of spirit which suffuse its pages. Treading a path which few forerunners have sought or found, he takes his readers up to a high place and shows them all the kingdoms of the earth stretched out in a great vista across space and time. "The supreme task of the age," wrote *The Times* on its hundred-and-fiftieth birthday, "is a large enough inspiration." To the accomplishment of that task the "Study" should contribute.

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### Short Notices

Air Ministry: Meteorological Office. *British Rainfall, 1933: Seventy-third Annual Volume of the British Rainfall Organization. Report on the Distribution of Rain in Space and Time over the British Isles during the Year 1933, as recorded by over 5000 Observers in Great Britain and Ireland.* (M.O. 375.) Pp. xvii+293+4 plates. (London: H.M. Stationery Office, 1934.) 15s. net.

THE general rainfall of 1933 was below the normal for the first time in eleven years, the percentage of the average of the 35 years 1881-1915 being only 80 for the British Isles as a whole, 82 for England, 80 for Scotland, 76 for Wales and 77 for Ireland. Only an area in north-eastern England and a very small area in Hampshire had more rain than the normal in consequence of one or two heavy storms. During the first quarter of the year, rainfall was more or less up to normal, there being a considerable excess in February, but October, and September in England, were the only other wet months. June was remarkable for the exceptional number of violent thunderstorms, though the month was scarcely more impressive in this respect than June 1914. There were also heavy storms here and there in the later summer months, but the event of the year was undoubtedly the great snowstorm of February 23-26 in Ireland, Wales and part of England. This is commemorated in the frontispiece showing a road heavily blocked with snow in Co. Carlow. An observer at Crickhowell in Breconshire, who was overtaken by the blizzard whilst on the mountains with some local farmers looking for sheep, states that they considered themselves lucky to have escaped with their lives,

especially as they repeatedly had to take shelter in the rocks to avoid choking, so thick was the drift and so fierce the gale.

As usual, this time-honoured annual contains some original papers. These deal with percolation and evaporation at Grayshott in Hampshire by S. E. Ashmore, average rainfall over the county of London by J. Glasspoole, and experiments with rain-gauge shields in exposed situations by F. Hudleston. Dr. Glasspoole's paper shows the influence of relief on average rainfall even within the small area of London; but it seems to us a pity that he should have selected the now somewhat antiquated period 1881-1915 upon which to base the average rainfall of London. It is now realised that meteorological averages are not stable. In any event there is nothing sacrosanct about the 35-year period 1881-1915, even though it may be useful in our generation as a standard of comparison for other periods.

L. C. W. B.

*Gmelins Handbuch der anorganischen Chemie.* Achte Auflage. Herausgegeben von der deutschen Chemischen Gesellschaft. System-Nummer 35: *Aluminium.* Teil A, Lieferung 1. Pp. iv+284. (Berlin: Verlag Chemie G.m.b.H., 1934.) 43 gold marks.

It seems to be uncertain to whom should be ascribed the first successful isolation of the metal aluminium. Davy, Faraday and Berzelius all seem to have met with a certain amount of success, but in 1856 Berzelius stated that after many unsuccessful or only partially successful attempts by Davy, Oersted, Wöhler and himself to isolate the metal, it was