the boiling point at 0°. Celsius's diaries are preserved at the Observatory of Uppsala, and show the development of his experiments with thermometers. The centigrade scale with freezing point at zero and boiling point at 100° appeared in 1747 on a thermometer bearing the name of its maker, the optician Ekström. It was constructed by Linnæus. In 1745, Linnæus had demonstrated to the Senate of the University his new thermometer, which in a letter to Sauvage he describes: "Ego primus fui, qui parare constitui thermometra nostra, ubi functum congelationis 0 et gradus coquentis aquae 100". It is strange that this centigrade thermometer of Linnæus, soon in universal use, and known at first as "the Swedish thermometer", should ever have become associated with the name of Celsius. But perhaps it was a casual association suggested by the C. for centigrade, together with the fact that Celsius was known to have experimented with thermometers.

Public Relations Work

In a pamphlet entitled "Whither Public Relations Work?" Dr. William A. Hamor, of the Mellon Institute of Industrial Research, Pittsburgh, emphasises the need of accumulations of facts about the social structure upon which public relations work rests, in order that the principles evolved will not crumble through faulty foundation work and therefore discourage this highly important managemental aid of the future. The development of such a science as sociology, especially for application in the province of public relations, requires investigators who are willing to achieve a thoroughly disinterested point of view toward the whole life of society for the purposes of their work. It is to be hoped that the day will soon come when an organisation may be established in which far-sighted social science research of a type corresponding in importance to physical science investigation may be carried forward extensively with the co-operation of management. When sociology has reached that plane of development, much of the guess-work that is now necessary—much of that costly element of chance—will gradually be eliminated from management as a whole as well as from the direction of public relations activities.

Re-awakening of Geysir at Hawkdale, Iceland

After a sleep of nineteen years, Geysir, the hot spring in Iceland from the name of which the term 'geyser' was derived, has been awakened to renewed activity by three research workers, Trausti Einarsson, Jón Jónsson of Lang (Bath) and Gudmundur Gislason. The report of the revival of Geysir appeared in the *Morgunblad* of July 30, announcing the fact that magnificent jets were thrown up 40–50 metres high. Later, however, comes another account stating that Geysir spouted fifteen times on that day, that as of old the highest jets were delivered in the morning and about eleven o'clock at night. Eruptions are very sudden, preceded by bursts of steam, and, as it is dangerous to be near, sketches of these are more or less guess-work. Following the steam, water 'cascades' all around the crater, and the accompanying steam renders photographs or measurements useless. None of the jets has actually been measured. It was Dr. T. Einarsson who conceived the idea of awakening Geysir. He realised that the 'saucer' of the geysir was the most important factor concerned, providing a large surface of water from which heat was radiated as fast as it was supplied from below, thus preventing the accumulation of heat in the pipe below necessary to produce the outburst. Consequently a gap was made in the lip of the saucer to prevent the water spreading out. The experiment was justified, and Geysir continues its old activity. The road from Parliament Fields to Geysir, 118 kilometres in length, is to be improved, so that motor-cars may be able to undertake the journey.

Speed and Engineering

In his presidential address to the Sheffield section of the Junior Institution of Engineers, Mr. Allan J. Grant gave an interesting account of the development of speed in engineering. Up to the advent of railways, about 1830, a speed of about 30 miles an hour was the maximum. By the use of steam trains a speed of 100 miles an hour was made safe. In 1933 the motor-car *Bluebird* did 272 miles per hour. The motor-boat *Miss Britain III* recently attained a speed of 111 miles per hour. To attain this speed, 1,375 horse-power had to be transmitted through a shaft only $1\frac{1}{8}$ in. in diameter. At the outbreak of the War, the most advanced aeroplane engines developed about 100 brake horse-power, and weighed about 4 lb. per horse-power, and the average speed varied from 60 miles to 90 miles per hour. The modern 'sprint' engines run at more than 3,000 rev. per min. and weigh only $\frac{2}{3}$ lb. per b.h.p. The recent flight of Charles Ulm to Australia in 6 days 18 hours proves the capabilities of small aircraft. Jules Verne's speed in "Round the World in 80 Days" is no longer fantastic. In fact, velocities would only have to be slightly more than doubled to become 1,000 miles an hour. At this speed, it would be possible for an airman starting at the equator at sunrise and flying west to arrive in 24 hours at sunrise and have continuous sunrise all the way round. If he flew in the latitude of London he would only have to fly at 620 m.p.h. to obtain the same effect. At the present time, it would not be possible for him to carry sufficient fuel for the purpose.

Railway Electrification

In an address broadcast from Radio Paris on May 16 and published in *Le Genie Civil* for June 22, Prof. H. Parodi says that the problem of railway electrification has come to the forefront in all the countries of the world. Between 1927 and 1933 more than 6,800 miles were electrified throughout the world, more than 3,000 being in Europe. The electrification of the Paris–Orleans, Orleans–Tours and Vierzon–Brive railway is an excellent example of main-line electrification, as all the services, signals, illumination, etc., are carried out electrically. Every discovery in the realm of power-production accelerates