

equal interest. An inquiry is also being made into the reasons underlying the economic failure of the Australian shale-oil industry. Researches on the production of power alcohol are at present limited to experiments which are being conducted under the supervision of Prof. N. T. M. Wilmshire, dealing with the hydrolysis and fermentation of the commoner Australian hardwoods.

It is evident from a consideration of this interesting new publication that the Commonwealth

Council for Scientific and Industrial Research is making encouraging progress with the multifarious problems presented by this isolated and fallow land-mass of the southern hemisphere, which until recently has remained free from the disturbances and developments following in the train of permanent civilised settlement. The future record of the Council's activities should be full of interest to workers in all branches of science.

JOHN READ.

### The Centenary of Marcelin Berthelot.

**F**RENCH chemists will be supported by their colleagues of many nations in the forthcoming celebration of the centenary of the birth of Pierre Eugène Marcelin Berthelot, the famous Parisian chemist whose researches, particularly those dealing with thermochemistry and with the synthesis of organic compounds, were as revolutionary—rather, as evolutionary—in their effect on the aims and outlook of chemistry as those of Lavoisier.

Berthelot was born in the Place de Grève, now Place de l'Hôtel de Ville, on Oct. 25, 1827, and died, also in Paris, on Mar. 18, 1907. The centenary celebrations commence on Sunday evening, Oct. 23, with a reception of the members of the official delegations in the Salons of the Sorbonne. On the following day the guests will be present at the opening of the exhibition of Berthelot souvenirs in the Faculty of Pharmacy, and will visit the savant's monument and laboratory at the Collège de France. There will follow a reception at the Hôtel de Ville, and a commemorative assembly at the Sorbonne.

On Tuesday, Oct. 25, the proceedings will commence with a ceremony at the Panthéon; the delegations will also attend a banquet at the Palais de Versailles and a soirée at the Théâtre National de l'Opéra. On Wednesday, Oct. 26, the foundation-stone of the "Maison de la Chimie" will be laid, lunch will be taken at Chantilly, there will be a reception by the Institut de France, and the celebrations will terminate with a reception in the Palais de l'Élysée by the President of the French Republic. The arrangements are being made under the presidency of M. Paul Painlevé. The "Maison de la Chimie," which is to be erected in Berthelot's honour, will provide a centre at which various international committees may establish their bureaux; it is intended also to provide a library, and suitable accommodation for gatherings of an international character.

Berthelot's contribution to scientific progress was amazing in its extent, marvellous in its accuracy, logical in its prosecution, clear in its expression, and far-reaching in its effects. Only in 1843, Berzelius had expressed little hope of the synthesis of more than a few exceptional organic compounds; the barrier between mineral chemistry and the chemistry of living things was still not only real, but also apparently permanent. Berthelot's synthesis of ethyl alcohol, formic acid, methane, ethylene, acetylene, and benzene de-

stroyed that barrier with a completeness which has been emphasised by the subsequent systematic architecture and construction of the wonderful edifice of synthetic organic chemistry as it exists to-day. Evidently Berthelot realised something of the proportions of that edifice when he said "Le domaine ou la synthese chimique exerce sa puissance créatrice est plus grand que celui de la nature actuellement réalisé." Out of an observation of the sluggishness of the formic acid synthesis there developed an extensive series of investigations on thermochemistry, a subject in which considerable progress had already been made by Thomsen and others; recognition of the principle of mass action can be traced to Berthelot's work on the interaction of glycerol and acids; the fixation of nitrogen interested him, and it is noteworthy that, in the face of considerable criticism, Berthelot asserted that free nitrogen could be assimilated by plants. He was also the first to ascribe this power to the activities of bacteria in the soil. In the latter half of his life, Berthelot took an active interest in public affairs. Thus, during the siege of Paris in 1870, he became president of the Scientific Committee of National Defence, an appointment which led directly to his systematic study of explosives and the theory of explosions, and to a new conception—that of the detonation wave. Later he became Minister of Public Instruction and then Minister of Foreign Affairs.

The dominant aim of Berthelot's life was the discovery of truth and the service of mankind. It was fitting that the medal struck in his honour on his seventy-fifth birthday should have borne the inscription, "Pour la Patrie et la Vérité." It is quite impossible in these columns to express in any but the most general and colourless terms the debt which human progress owes to Marcelin Berthelot. Those who, without studying the great number of his original papers, desire to know more both of the man and of his work would do well to refer to Prof. H. B. Dixon's Berthelot Memorial Lecture (*Journal of the Chemical Society*, 99, 2353; 1911), to a longer notice by M. Émile Jungfleisch (*Bulletin de la Société Chimique de France*, 1913, 260 pp. separately paginated), to a brief article by Prof. Camille Matignon (*Chimie et Industrie*, 16, 3; 1926), and to an appreciation by Dr. C. Gracbe (*Berichte der Deutschen Chemischen Gesellschaft*, 41, 4805; 1908).