

## Calendar of Patent Records.

February 26, 1781.—The pigment known as 'Turner's Yellow' or 'Patent Yellow' was the subject of a patent granted to James Turner on Feb. 26, 1781, and was at one time extensively used. The validity of the patent was twice upheld in the courts and its life was extended by Act of Parliament (32 Geo. 3, c. 73) on the ground that "the colour was made from British materials, and that the invention has not only in a great measure superseded the necessity of importing the colour from abroad, but it is now exported in considerable quantities to most parts of Europe, the East and West Indies, and America, . . . and by the great consumption of common salt necessarily used in preparing the same the said invention will afford an increase to the public revenue." Like most lead paints, however, 'Turner's Yellow' is affected by long exposure to a sulphurous atmosphere, and the introduction of the chrome colours has rendered it obsolete.

February 27, 1802.—The closed kitchen cooking-range was first patented by George Bodley, of Quay Foundry, Exeter, on Feb. 27, 1802. The patent was for a stove constructed with an oven on one side and a boiler on the other, the flue gases passing from the upper part of the stove round three sides of the oven, under and up one side of the boiler, and then into the chimney; the whole being covered with a plate upon which vessels could be warmed.

February 28, 1799.—The so-called American type of windmill, in which instead of the small number of sails of large size, common to the mills of Europe, there is a large number of small blades arranged in wheel formation, was included in an English patent granted to George Medhurst on Feb. 28, 1799.

February 29, 1612.—The patent granted to Simon Sturtevant on Feb. 29, 1612, for the use of coal in all metallurgical operations, including iron production, was surrendered the following year, and it is chiefly of interest now because in it Sturtevant foreshadowed with remarkable accuracy the procedure, adopted officially much later, of filing provisional and complete specifications in connexion with patent applications. Sturtevant not only annexed to his petition for a patent a statement describing "in some measure" his invention and the method of carrying it out, but he declared also that the invention would be "more fully, amply, and particularly demonstrated, specified, described, and contained, in a large treatise which shall be put in print and published before the last day of Easter term next," and the treatise was in fact published by the date mentioned. The specification did not become a regular feature of the procedure of patent practice until more than a hundred years later, and the filing with the application of a provisional specification describing the nature of the invention was especially adopted by the Act of 1852.

March 1, 1651.—The official series of English and British patents which begins with the year 1617 and is being continued to-day, does not include any entries for the Commonwealth period, though several patents were granted during that regime. Some of these were in the usual way by Cromwell's Letters Patent, but others were granted direct by Act of Parliament and not under the Great Seal. One of these latter was to Jeremy Buck, of Minchinhampton, Glos., and dates from Mar. 1, 1651. Like Sturtevant's referred to above, it is one of the many unsuccessful patents dealing with the use of coal for smelting iron. The Act contains a proviso that, after seven years, Buck was to take apprentices and "teach them the knowledge and mystery of the new invention."

## Societies and Academies.

LONDON.

Geological Society, Jan. 23.—J. K. Charlesworth: The South Wales end-moraine. The Irish Sea ice stood over Cardigan Bay at the period of the maximum advance of the Newer Drift period, and ponded back the natural drainage of northern Pembrokeshire and southern Cardiganshire to form a chain of extra-glacial lakes connected by marginal streams. The end-moraine of the Newer Drift passes across eastern and southern Wales. In northern Pembrokeshire and southern Cardiganshire it was laid down along the edge of the Irish Sea ice. Farther east, the moraine is practically continuous, and represents the marginal product of the local Welsh ice, which was centred in the mountains of Central Wales, the Carmarthenshire Vans, the Brecon Beacons, the Black Mountains, and the mountains of Radnor Forest. This ice flowed beyond the outlets of the great valleys of the east to form the valley-glaciers of the Severn and other rivers, and extended southwards on to the coastal plain of Glamorgan. The Newer Drift is of early Magdalenian age.—A. Jowett and J. K. Charlesworth: The glacial geology of the Derbyshire dome and the western slopes of the Southern Pennines. The Derbyshire Dome of the Southern Pennines was overridden at the period of maximum glaciation by ice from the north and north-west. This is shown by the occurrence of patches of true boulder clay, by the wide distribution of erratics of Lake District and Galloway rocks over the dome and along its valleys, and other evidence. The upper limit of the erratics from the north follows the outer flanks of the south-western Pennines at about 1250 feet above sea-level. The ice-recession from this position was associated with a copious marginal drainage, which eroded a well-developed suite of channels linking a number of big extra-glacial lakes in the valleys of the western Pennines.

Physical Society, Jan. 25.—C. Vernon Boys: A fused quartz pendulum rod for clocks. Possible causes of the progressively increasing losing-rate found in the going of the Shortt clock are discussed. A design is given for the free pendulum with rod of fused quartz; carbon steel and mild steel for the supporting springs and the bob respectively are suggested.—G. W. Sutton: A method for the determination of the equivalent resistance of air-condensers at high frequencies. The losses in air-condensers are divided into two portions: (a) those due to leakage through the solid dielectric, and (b) those due to terminal and plate resistance. A method is developed for measuring each, under conditions such that the other is negligibly small.—L. Hartshorn: The measurement of the anode circuit impedances and mutual conductances of thermionic valves. A Wheatstone bridge method with current of telephonic frequency is used. Although both anode circuit resistance and mutual conductance vary very considerably with the grid bias, the product of the two, which gives the voltage factor of the valve, is approximately constant. The increase in the effective values of the inter-electrode capacities is explained by the presence of the space charge, which also has the effects of making these capacities vary with the frequency and of giving them a comparatively high power factor, especially at low frequencies.

Linnean Society, Jan. 31.—Miss G. H. Faulkner: The anatomy and histology of bud-formation in the Serpulid, *Filograna implexa*. The genus *Salmacina* is synonymous with *Filograna*. The position of the plane of fission and the initial size of the bud are