Worsley to Manchester Canal with its famous Barton Aqueduct over the River Irwell, and also the Bridgewater Canal from Longford Bridge to the Mersey at Runcorn, by which craft could proceed from Manchester to Liverpool. While he exercised the greatest possible economy in his private affairs, the Duke spent some £220,000 on his canals, which, however, ultimately yielded an annual revenue of £80,000. The Bridgewater Canal was sold in 1887 to the Manchester Ship Canal Company for £1,710,000. The Duke died in London on March 8, 1803, and was buried in the family vault at Ashridge. The monument to which reference has been made now belongs to the National Trust.

British Patents

WHILE the fifty-third Report of the Comptroller-General of the Patent Office (London: H.M. Stationery Office. 4*d*. net) is of academic interest as reminding us of the diversity of modern scientific research, its tabular appendixes reveal a gradual change in the destination of patent grants which is of over-riding industrial importance to Great Britain. Of the grants made in 1933, the last year for which final figures are available, 9,000 were made to residents within the British Empire as against 8,100 to foreigners. The figures for applications made during last year show a drop in British applications of six per cent since 1933, while those from outside the Empire have increased more than seven per cent. On this basis, grants made directly to foreigners in respect of applications made in 1935 will clearly exceed those made to British subjects. When it is realised that 1,796 of the applications made in 1935 by residents in Great Britain were made on behalf of inventors residing abroad, it becomes clear that foreign patentees are well on the way to outnumbering Britishers. If figures for purely scientific inventions were available, they would probably be even more striking, and it is disquieting to realise that patentees with no real compulsion on them to manufacture in Great Britain are increasing rapidly; German applications, for example, increased from 4,050 in 1933 to 4,481 in 1935, while in the same time applications from the United States grew from 3,194 to 3,612, these two countries being responsible for well over sixty per cent of the total foreign applications. There were no requests made in 1935 for the grant of a compulsory licence, but there were 789 for indorsement of patents "Licences of Right". The report is silent as to the results of the experimental extension of the search recently introduced, but the proportion of patents granted to applications made is apparently unaffected by it. The office surplus of receipts for 1935 over expenditure was £232,307, and must surely be a record.

Development of Rockets for High Altitude Exploration

OUR readers who are interested in the development of rocket propulsion, and may have read a review in NATURE of March 14 of a somewhat premature book on the possibilities of using rockets for interplanetary travel, will be glad to hear that an authoritative statement has been issued by the Smithsonian Institution concerning the researches carried out by Dr. Robert H. Goddard, who has been experimenting at Roswell, New Mexico. Dr. Goddard has produced a rocket weighing five pounds which is capable of developing 1,030 horse-power for a period of twenty seconds by the combustion of a mixture of gasolene and liquid oxygen. Difficulties were experienced with the steadiness of direction of the rocket, which is now controlled by gyroscopic means. So far, the rocket has not attained an altitude of more than 7,500 feet, but the altitude has been purposely limited for experimental reasons. It is hoped that it will be possible to develop rockets capable of carrying recording apparatus which will serve as scientific instruments for exploring the upper atmosphere. It is good to hear that such experiments are being carried out, and the sober objectivity of Dr. Goddard's work presents a sharp contrast to the unscientific imagination exhibited by those who seek to direct attention to the advent of interplanetary travel long before the preliminary investigations that might throw light upon its possibility or otherwise have been completed.

Archæological Investigation in the Irish Free State

UNDER a scheme of the Irish Free State for the relief of unemployment, in 1935 excavations were carried out on eleven sites, those on five being in continuation of work initiated in 1934. The results for 1935 are summarised by Dr. S. P. O'Riordan of the National Museum of Ireland in *Discovery* of April. Sites partly examined in 1934 are described first. In a cairn near Baltinglass, Co. Wicklow, additional stones carved with spiral ornament were found, with sherds of bronze age pottery and evidence of cremated burials. At Agnaskeagh, Co. Louth, the second of a group of megalithic cairns was examined and evidence again found of association with Early Iron Age. There was a considerable amount of iron and a cremation in a Hallstatt urn against the collapsed slab of a burial chamber. The most important investigation, again producing surprising results, was that of the complicated series of earthworks at Cush, Co. Limerick. Corroboration of the previous season's results, dating ring-forts with souterrains back to Late Bronze Age, was found in the discovery that the fort containing the burials was not the earliest, but had been built later than that adjoining it, and further that occupation had continued over a long period. House sites, not yet clear in all detail, show the plan of a distinctive Irish house-type. At Dunshaughlin, Co. Meath, a crannog produced evidence of a much larger area for this early Christian site (8–10th centuries) than was previously thought. Enormous quantities of bones of wild and domestic animals were found. The monastic site of Gallen Offaly continued to produce important evidence for the evolution of Irish art. Burial mounds at Lug, near Tullamore, Carrowjames, Co. Mayo, and Pollacarragune, Co. Galway, produced interesting material of bronze and iron age date, including what is probably the finest known razor as regards decoration, from the last-named.