University and Educational Intelligence.

THE thirteenth series of "Methods and Problems of Medical Education" has been issued by the Rockefeller Foundation of New York. It is in the same form as previous issues and is entirely devoted to a description of the various medical departments of the Vanderbilt University School of Medicine, Nashville, Tennessee.

A SERIES of lectures during the Michaelmas and Lent terms on general science—or better, perhaps, on aspects of modern scientific thought—has been arranged by University College, Cardiff. The lectures, by various members of the staff of the College, are delivered on Saturday mornings at noon, beginning on Oct. 5. The lectures are not free, but are open to members of the public.

OF sixty-eight doctorates the conferment of which was notified in the *London University Gazette* of July 31, thirty-seven were in the faculty of science, as follows: ten in chemistry, five in botany, three in bacteriology, two each in anthropology, biochemistry, geology, psychology, and zoology, and one each in agricultural chemistry, chemical technology, economics, education, physics, physiology, and statistics. Of the recipients of these degrees thirteen were students of the Imperial College of Science and Technology, nine of University College, and four of King's College. Of fifty-nine Ph.D. degrees, thirty were in the faculty of science, sixteen in arts, eight in economics, and five in engineering. This distribution of doctorates among the various branches of science may be compared with the following distribution of American university doctorates in 1927–28: chemistry 269, zoology 89, physics 78, psychology 66, botany 61, mathematics 44, geology 35, agriculture 31, pathology 31, bacteriology 29, engineering 28, physiology 28, other subjects 44.

AT the world conference on 'New Education' held at Elsinore, Denmark, during August under the auspices of the New Education Fellowship, reports on examinations were submitted to the Examinations Enquiry Committee from 22 different countries. Dissatisfaction with the examination systems as conducted in their respective countries was generally expressed by the delegates. Among the principles adopted by the Committee were the following: Scientific inquiry into the examination system is necessary, possibly on the lines of that started in England by the New Education Fellowship in co-operation with teachers' organisations. A rigid mechanistic type of external examining and supervision interferes seriously with good teaching. Teachers should take an active part, both as individuals and in their corporate capacity, in examination procedure and reform. In any inquiry undertaken there must be consideration of (1) a newer philosophy and method in education; (2) the expanding programme of publicly supported education; (3) the changing curriculum; (4) the more recent developments in psychology, particularly available evidence on the emotional effects of the present examination system; (5) the practical experience in pioneer schools in different countries; (6) the scientific measurement movement with its efforts on behalf of new-type examinations. As to examinations for entrance to universities and higher technical institutions, it will undoubtedly be necessary to devise more adequate methods of selection. The authorities should give careful consideration to the desirability of taking into account various measures of the candidate's ability to profit by university study, such as the judgment of the teachers and the record of school work. Experiments that have been made in practically unrestricted admission to university study in several countries should also be examined.

Calendar of Patent Records.

September 8, 1832.—The patent granted on Sept. 8, 1832, to Richard Badnall for his new system of railway in which great economy of working was to be obtained by running the trains on an undulating track having long descents and comparatively short ascents, aroused a lengthy discussion, sponsors and opponents of the scheme having a battle royal in the pages of the *Mechanics' Magazine* and other journals throughout the years 1833 and 1834. Experiments were actually carried out on a section of the Liverpool and Manchester Railway with Stephenson's *Rocket* and other locomotives, but proposals for further trials of the system were abandoned.

September 9, 1829.—T. S. Brandreth's patent, dated Sept. 9, 1829, for "a new method or methods of applying animal motion to machinery" covers the invention of his 'cyclopede' locomotive which ran during the celebrated Rainhill locomotive trials, the centenary of which occurs next month. The 'cyclopede' was worked by two horses moving an endless platform with their feet, and at the trials, with a gross weight of about 5 tons, travelled with its load at 5 miles per hour. The horses themselves actually walked at the rate of 1¼ miles an hour.

On the same day, Sept. 9, 1829, there was granted to James Soames a patent for the separation of coconut oil into its solid and liquid constituents, which laid the foundation of the present-day firm of Price's Patent Candle Co., Ltd. The patent was purchased in 1830 by Edward Price and Co. for the purpose of using the coconut stearin as a substitute for tallow in the production of a cheap candle. The use of the material itself did not prove satisfactory, but a half-and-half mixture with tallow was more successful, and the 'composite candle' put on the market for the first time in 1840 was immediately popular. The patent was extended for three years from 1843, and the business was acquired by the present company four years later.

September 10, 1856.—Sir William Siemens' application for a patent on Sept. 10, 1856, included a provisional specification in which was described for the first time a 'drum-wound' armature of the kind afterwards used in the Siemens' dynamo, as suggested to him by his brother Werner. The application was not proceeded with, and the patent was not granted.

September 11, 1828.—One of the most important improvements in metallurgy was the introduction of the hot-blast in iron-smelting, which was patented by James Beaumont Neilson on Sept. 11, 1828, and was first demonstrated at the Clyde Ironworks in Glasgow the following year. The actual invention of the use of the hot-blast has been with some reason attributed to Robert Stirling, who describes its use for the purpose of economising fuel in glass furnaces in his patent of 1816, but prior to Neilson's patent there was no commercial application to the making of iron. In fact, the iron-masters had been convinced of the superiority of the cold-blast because the furnaces were known to have a greater production in winter than in summer. Neilson's rights were hotly contested, but the litigation, which came to an end only in 1843, resulted in Neilson's favour.

September 11, 1876.—The Jablochkoff 'electric candle', one of the earliest successful arc lamps, was the subject of a patent application made on Sept. 11, 1876. The application was not completed, but a patent was sealed on a second one made a few months later. The lamp, which for a time was extensively used, comprised two parallel carbons cemented together and insulated one from the other by a mass of kaolin, and required a 'bridge' to start it.