

geography, at Westminster Training College. Particulars of courses can be obtained from the University Extension Registrar, University of London, South Kensington, S.W.7.

WE have received from the United States Bureau of Education a copy of its Biennial Survey of Education, 1924-26 (Washington, D.C.: Government Printing Office, 2.30 dollars). Half of the volume is a convenient compilation of studies, most of which have already appeared in the course of the past two years in the form of 'advance sheets', by members of the Bureau's departmental staff and other specialists, and the rest consists of statistical tables (general statistics, State school systems, city school systems, universities, colleges, and professional schools, teachers' colleges, public high schools, private high schools, and private commercial and business schools), representing the most important class of the Bureau's publications of 1927-28. Among the subjects of the special studies are: Trends in the development of secondary education, industrial education, commercial education, home economics, adult education, educational surveys, parent-teacher associations, educational boards and foundations, and education in foreign countries. Of special interest as evidence of enthusiasm for education and self-examination are the chapters on parent-teacher associations and educational surveys. The former shows a growth in membership of parent-teachers associations from a hundred thousand to a million in six years, and the latter gives particulars of a great variety of investigations, each having for its purpose the unbiased analysis of educational situations which may be used as bases for formulating programmes for improvement.

UNIVERSITY matriculation requirements in the United States formed the subject of an investigation recently conducted by the professors of education at Leland Stanford Junior University and the State Teachers' College of Kansas. The field of inquiry included 331 colleges and universities and 977 high schools. The results of the investigation are reported in the April number of *School Life*. It was found that English was the only subject recognised by all as indispensable for candidates for admission to university courses. Some degree of proficiency in mathematics is required by 96 per cent of the institutions reporting, in social science by 77 per cent, in a foreign language by 75 per cent, and in laboratory science by 54 per cent. Of the women's colleges only 25 per cent require science, whilst 74 per cent require Latin. Among the conclusions resulting from the investigation are: there is a wide demand for the restatement of admission requirements in terms allowing more latitude as regards subjects offered, and ousting mathematics and foreign languages, in particular, from their privileged position; an increasing minority of those concerned view with favour the relatively new ideas of grading candidates with reference to results of intelligence tests and reports on such personality traits as industry, reliability, judgment, co-operativeness, leadership, initiative, and physical vitality as well as average scholarship; much progress has been made towards harmonising the views of the high school principal and the university, through the appreciation by the latter of the necessity confronting the high school of meeting the needs of all its pupils and conforming its programme of studies to those needs. The articulation of university and secondary education will be further improved as a result of the general survey of secondary education recently authorised by Congress to be carried out in the course of the next three years.

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Calendar of Patent Records.

September 28, 1799.—One of the pioneers of gas lighting was Philippe Lebon, to whom a French patent for "Nouveaux moyens d'employer les combustibles plus utilement, soit pour la chaleur, soit pour la lumière, et d'en recueillir les divers produits", was granted on Sept 28, 1799. No practical use appears to have been made of Lebon's apparatus for lighting purposes, but he established a tar factory near Le Havre which obtained some success.

September 29, 1842.—W. S. Henson was the first to design a heavier than air flying machine on the lines of the modern monoplane, a patent for his machine, driven by a steam-engine, being granted to him on Sept. 29, 1842. The aeroplane, known as the 'Aerial steam carriage', was well advertised in the Press of the period but was never actually constructed. Henson was assisted in his experiments by Stringfellow, who constructed a steam-driven model aeroplane—now in the Science Museum—which was the first machine to fly under its own power.

October 1, 1852.—Up to 1852, the procedure for obtaining a patent for an invention in England was the same as that prescribed for any other grant under the Great Seal, and involved, after the Petition had been lodged, separate visits, with the appropriate fees in each case, to the Secretary of State's office, the Attorney or Solicitor-General, the Signet Office, the Privy Seal Office, and the Chancery Patent Office, and the subsequent enrolment of the grant and of the specification. By the Patent Law Amendment Act which came into force on Oct. 1, 1852, one office was provided for all stages of the grant, a single patent was obtainable for the whole of the United Kingdom, and all specifications were printed and made readily available to the public.

October 2, 1608.—Though he cannot be called the first inventor of the telescope—for these were known previously though more or less only as scientific curiosities—Johann Lipperhey, spectacle maker of Middelburg in Holland, who on or before Oct. 2, 1608, applied to the States-General for a privilege for thirty years, or alternatively for the grant of a pension in respect of the invention, must be given the credit of being the first to make telescopes commercially, and from him dates the realisation of their importance and their practical application. Fifteen days after Lipperhey's petition and while this was still pending, a similar application was received from Jacob Adriaanzoon, and finally Lipperhey's application was refused on the ground that "many other persons had a knowledge of the new invention". Three instruments—binoculars—were, however, ordered from him, and he received 900 florins in payment.

October 2, 1839.—The earliest proposal to apply electricity to clocks and to provide a system of synchronised secondary clocks controlled by a standard clock was made by Karl August von Steinheil, who was granted a Bavarian patent for three years for the invention on Oct. 2, 1839, thus preceding by some months Alexander Bain and Sir Charles Wheatstone in England. A description of Steinheil's invention was published in the Munich journal *Kunst- und Gewerbeblatt* for 1843.

October 3, 1687.—On Oct. 3, 1687, a patent was granted to Joseph Mason for "an engine by the help of which a weaver may performe the whole worke of weaving such stufte as the greatest weaving trade in Norwich doth now depend upon, without the help of a draught-boy". No description of the invention is available, but the services of the draw-boy were not finally dispensed with in figure weaving until the invention of the Jacquard machine in 1790.