

AMERICAN MINERAL STATISTICS.¹

THE annual report of the production of minerals in the United States has been issued for 1910 by the United States Geological Survey in the form of two bulky volumes dealing with metallic and non-metallic products respectively. Most of the statistical information had been already published in the special pamphlets issued from time to time by the Geological Survey, so that the present volumes contain no new facts, although they add a great quantity of important and interesting details, whilst the study of the subject is, of course, greatly facilitated by the collection and juxtaposition of all the various items.

The total value of the mineral production is given as a little more than 2,000,000,000 dollars, an increase of 6·2 per cent. over that of 1909. This figure is quite comparable with the values of output of the United States for previous years, but is not comparable with those for other countries, because of a number of inexactitudes due to the method in which the returns are presented. As has more than once been pointed out, the grand total contains a number of reduplications, in spite of the statement in the report itself that "all unnecessary duplication has been excluded." The report directs attention to the fact that the value of the coke produced, practically 100,000,000 dollars, is excluded from the total, because "the quantity and value of the coal used in its manufacture are included in the statistics of coal production." It neglects the equally important fact that practically the whole of this coke is consumed in the production of metals, such as pig-iron, copper, and lead, and as the value of these metals is given, and not merely that of the ores from which they are extracted, the cost of the coke is really included in the value assigned to the metals. If the total value assigned to mineral products is to be correct, the value of all the fuel used for metallurgical purposes, and for burning clay products, lime, cement, &c., should be deducted from the grand total; this is by no means a trifling correction, for it would probably mean a diminution of the total by something like 10 per cent.

Care has been taken in this report to include only metals produced from domestic ores as far as possible; this brings out the very interesting fact that the recovery of metals from residues, by-products, waste materials, &c., is assuming very important dimensions. Thus in 1910 the production of zinc, here called "primary spelter," direct from domestic ores amounted to 252,479 tons, and that of zinc from imported—chiefly Mexican—ores to 16,705 tons, whilst the quantity of so-called "secondary zinc" recovered from waste and scrap materials of various kinds was no less than 68,723 tons, or about a quarter of the production of primary spelter. In the case of tin the figures are still more striking; the quantity of tin obtainable direct from ores is not stated, but appears to be of the order of some 40 tons, whilst the recovery of secondary tin from scrap of all kinds amounted to no less than 13,903 tons. It is calculated that the recovery of secondary tin throughout the world is only 27,000 tons, so that one-half of this production takes place in the United States. Seeing that the world's output of primary tin was about 115,920 tons in 1910, the recovery of tin from scrap is assuming very important dimensions.

Amongst the non-metallic minerals, coal is, of course, by far the most important, the output for 1910 exceeding 500 millions of tons, this being the first time that this figure has been attained. The mineral

output shows steady and progressive development in practically all directions, and these volumes afford conclusive evidence of the prominent position that the mineral riches of the United States hold amongst the sources of national wealth. It should, however, in all fairness be added that these two fine volumes of mineral statistics are not unworthy of the flourishing industries, the progress of which they chronicle. Is it too much to hope that we may have some day in this country a record of mineral statistics that might worthily sustain comparison for accuracy and completeness with that issued by the United States Geological Survey?
H. L.

INCOME OF AMERICAN COLLEGES OF UNIVERSITY RANK.

THE second volume of the report of the United States Commissioner of Education for the year ended June 30, 1911, has now been received from Washington. It is chiefly devoted to statistical details concerning the development and present provision of educational facilities in institutions of all the grades included in the American system of education. Especially interesting are the facts which may be gathered respecting education of university rank.

The total receipts of the universities in the United States are given as 18,934,410*l.*, derived from a variety of sources, as shown in the following table:—

Total Receipts of Universities and Colleges for the year ended June 30, 1911.

Tuition and other educational fees	... 3,698,600
Room rent	... 381,700
Board and other non-educational fees	... 1,218,970
Productive funds	... 2,658,700
State or city for increase of plant	... 932,430
" " current expenses	... 2,941,450
United States Government	... 1,175,040
Private benefactions for increase of plant	... 1,144,700
" " endowment	... 2,753,970
" " current expenses	... 693,950
All other sources	... 1,334,900

Total receipts 18,934,410

More detailed information is provided as to the benefactions given during the year under review, which exceeded four and a half millions sterling, or 4,592,620*l.* to be precise. We notice, for example, that the total is more by 845,200*l.* than was received during 1909-1910. Fifty universities and colleges each received gifts amounting to more than 20,000*l.*, and, as the following table shows, seven universities and colleges were fortunate enough to benefit to the extent of 100,000*l.* or more.

Universities and Colleges receiving 100,000*l.* or more in Benefactions during 1910-11.

Columbia University	... 507,010
Harvard College, Massachusetts	... 349,090
University of Chicago	... 271,790
Yale University	... 226,880
New York University	... 185,690
Dartmouth College, New Hampshire	... 156,890
Amherst College, Massachusetts	... 101,950

A separate chapter in the report deals with agricultural and mechanical colleges, but the Commissioner is careful to point out that some of them are also included under universities and colleges, so that overlapping occurs. The following table shows the total income of the agricultural and mechanical colleges for the year under consideration. Grants for experiment stations, farmers' institutes, and other means for

¹ "Mineral Resources of the United States, Calendar Year, 1910." Part i., Metals. Pp. 796+plate. Part ii., Non-metals. Pp. 1005+plates. Washington: Government Printing Office, 1911.)

extending agricultural education are not included in the amounts shown.

Income of Agricultural and Mechanical Colleges for 1910-11.

	£
Income from State endowment	22,890
Appropriations for current expenses ...	1,004,990
Tax levy " "	575,820
Appropriations for increase of plant ...	558,410
Tax levy " "	100,440
Total State aid	2,262,550
From land grant of 1862	156,670
From other land grants	47,090
Additional endowment	450,000
Total Federal aid	653,760
From other endowment funds	149,800
Tuition and incidental fees	487,310
Other sources	562,500
Total income	4,115,920

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

DR. R. G. MCKERRON has, with the approval of the King, been appointed professor of midwifery in the University of Aberdeen, in succession to Prof. W. Stephenson, who has resigned.

THE foundation stone of a new college for the training of teachers at Dundee was laid on Thursday last by Lord Camperdown. The cost of the building will be 60,000l., and provision will be made for 400 students.

PROF. J. LORRAIN SMITH, F.R.S. (at present professor of pathology and pathological anatomy in the University of Manchester) has been appointed to the chair of pathology in the University of Edinburgh, in succession to Prof. W. S. Greenfield, who is retiring from the position.

THE sum of 5000l. has been given by the Lord Lieutenant of Berkshire, Mr. J. H. Benyon, towards the new buildings of University College, Reading. The donor has apportioned his gift between the new hall, the Letters Buildings, the Agricultural Buildings, and the new St. Patrick's Hall.

THE Board of Agriculture has issued a scheme under which the University College of North Wales, Bangor, will undertake advisory work in forestry for the whole of Wales. Prof. F. Story, professor of forestry at the College, has been appointed to the position of advisory officer for all Wales under this scheme. Prof. Story will retain his professorship, but Mr. Thomson Thomson has been appointed assistant lecturer under him.

THE Senate of the projected University of Western Australia recently advertised eight professorships, and the Agent-General for the State reports that the response has been of a character justifying the belief of good appointments being made. The Senate now invites applications for lectureships in veterinary science and mental and moral philosophy. It is stated that Crawley Park, near Perth, which contains spacious grounds, is likely to be selected as the site of the new institution.

THE fourth international congress of physical education is to be held in Rome on October 24 to 27. Discussions are to take place on the organisation of physical education as a preparation for military

service; a rational method of physical training in primary, middle, and secondary schools; the value of sports in physical education, and their physiological limitations; the physical education of woman in relation with her function in the family and in society; respiratory gymnastics and choral singing in schools; open-air schools; the physical exercises suitable for the prophylaxis of tuberculosis.

THE following are the arrangements for the opening of the winter session of certain of the medical schools:—That of St. Bartholomew's Hospital will be inaugurated on October 1 by an old students' dinner; at Charing Cross Hospital the prizes will be distributed on October 2 by the Bishop of Peterborough and Lady Mary Glyn; at St. George's Hospital the prizes will be distributed on October 1, and an address delivered by Mr. H. B. Grimsdale on "The present Duty of the Medical Citizen"; at Guy's Hospital there will be a *conversazione* on October 4 by the Pupils' Physical Society, the session commencing on October 1; at the London Hospital the Schorstein memorial lecture will be delivered on October 1 by Prof. T. W. Griffith; at the London School of Medicine for Women an address on "Common Sense" will be given on October 1 by Dr. Jane Walker; King's College Hospital will hold a dinner on October 1; at the Middlesex Hospital the prizes will be distributed on October 1 by Sir Charles Wyndham, and an address delivered by Dr. W. S. Lazarus-Barlow on "The Genius of the Infinitely Little"; at St. Mary's Hospital on October 1 the Lord Mayor of London will deliver an address and distribute the prizes; in connection with St. Thomas's Hospital there will be an old students' dinner on October 1; the Westminster Hospital School will have a dinner on October 3; a dinner, on October 2, will inaugurate the new session of the University College Hospital School; there will be a *conversazione* on October 1 in connection with the University of Birmingham; an address will be given on October 1 at the University of Manchester by Dr. H. D. Rolleston on "Universities and Medical Education," and at the University of Leeds an address will be delivered on October 1 by Sir Alfred Keogh, K.C.B.

THE new session of the Sir John Cass Technical Institute, Aldgate, E.C., which is especially devoted to technical training in experimental science and in the artistic crafts, will commence on Monday, September 23. The instruction in experimental science provides systematic courses in mathematics, physics, and chemistry for London University examinations, in addition to the courses on higher technological instruction, which form a special feature of the work of the institute. In connection with the latter, several new departures are being made for the coming session. The curriculum of the fermentation industries has been much developed, and now includes courses of instruction on brewing and malting, on bottling and cellar management, and power and mechanical plant in the brewery, on the microbiology of the fermentation industries, and on the chemistry and technology of hops, in addition to courses in chemistry and physics for those who have not sufficient previous knowledge of these subjects. In the department of physics and mathematics a special course of lectures and demonstrations will be given on colloids, which will deal with the methods employed in their investigation and their relation to technical problems; also a special course of lectures on the theory and application of mathematical statistics, in which the application of modern mathematical methods of dealing with statistical data in social, educational, economic, and physical problems will be discussed and opportunity