

ner's direction. This explorer made a circuit of the great mountain Kinchinjinga, delineated the boundary between north-east Nepaul and Tibet, fixed the peak of Nuijin Sangra, and completed the sketch of the Zemu River. Colonel Tanner's surveys are particularly interesting as establishing the accuracy of those made by A. K. Our brief account will serve to indicate how much interesting matter is contained in this report.

A SALT-MINE IN WESTERN NEW YORK.

MR. WILLIAM FOSTER, jun., of New York has at last succeeded in sinking a shaft to the salt deposits of central New York. As I was permitted a few weeks ago to descend to the mine, I will, by the owner's permission, give the facts to the public so far as they are of scientific and general interest.

This is, I believe, the first successful attempt to mine the salt deposits of this region. In the neighborhood of Syracuse no salt deposits have been found; but the dependence is wholly upon salt springs which derive their salt from unknown sources. In the valley of the Genesee, in Livingston county, about thirty miles south of Rochester, deposits of salt were penetrated some years ago, in boring for oil, at a depth of about a thousand feet; and numerous wells have been bored from which brine is pumped, both there and in Wyoming county to the west. Previous attempts to sink shafts to these deposits in Canada have encountered so much water, that the projects have proved impracticable; but the present attempt seems to be entirely successful. The shaft was sunk 1,013 feet; and the mine is perfectly dry, with the exception of a little water which drips down the shaft. An inch-and-a-half pipe removes all the water. When I visited the mine in April last, they had drifted about 300 feet in each direction. The stratum of salt in which they are working is twenty-two feet thick, and fourteen feet of it is pure salt. The miners remove it by blasting (boring holes with augers specially adapted to the purpose, and inserting small charges of dynamite). I collected some of the dust which was coming from one of these holes, which had penetrated about four feet horizontally and about midway between the top and the bottom. This has been analyzed for me by Professor Jewett of Oberlin, with the following result:—

	PER CENT.
Sodium chloride.....	97.84
Calcium sulphate.....	1.04
Moisture.....	.08
Residue insoluble in water.....	.43
Magnesium sulphate.....	trace
Total	99.39

This is remarkably free from impurities, even for refined salt. Doubtless, by selecting specimens, a still greater purity might have been obtained. The above specimen fairly represents the purity of a stratum fourteen feet thick, which is now being mined without hinderance from any causes.

Other strata of salt were found both above and below this one. The upper stratum was reached at a depth of 991 feet, and was so mixed with shale as to be unprofitable. The lower stratum was reached at 1,047 feet, and is fifty feet in thickness, being practically clear salt. Between these two there was also a four-foot stratum of clear salt. Thus, in all, there is, within a distance of two hundred feet, not far from eighty feet of solid salt at a depth of a little over a thousand feet below the surface. The shaft begins in Hamilton shale. The following is the record:—

	Thickness in feet.	Depth in feet.
Shale.....	407	407
Corniferous lime rock.....	148	555
Shale.....	223	778
Limestone and shale.....	70	848
Shale.....	102	950
Lime rock.....	11	961
Shale and salt.....	30	991
First bed clear salt.....	22	1,013
Lime-rock and shale.....	28	1,041
Second bed clear salt.....	4	1,045
Rock.....	2	1,047
Third bed clear salt.....	58	1,105

This mine is at Piffard Station, Livingston county, on the Buffalo, New York, and Philadelphia railroad.
G. F. WRIGHT.

LONDON LETTER.

THE movement previously referred to in this correspondence, for promoting such changes in the University of London as will bring the teachers of the various colleges into closer relations than at present with the examiners, has just made a great step in advance. At a meeting of convocation (i.e., of the general body of graduates) on June 29, a scheme was adopted, and sent on to the senate (the executive body) for consideration. It proposes, 1°, that the constitution of the senate be enlarged by the direct representation thereon of certain educational bodies in and near London, such as University college and Kings college, London, the Royal college of physicians and of surgeons, the Royal society, the council of legal education, etc; 2°, that certain colleges shall, under the title 'constituent colleges,' form a part of the university; 3°, that a council of education shall be established, consisting of repre-

sentative graduates, representatives of these constituent colleges, the examiners, which shall advise the senate on all matters relating to the subjects of examination, and shall appoint boards of studies; 4°, that the university (now entirely dependent on fees and a treasury grant) shall have power to hold real property, in order that it may assist by any suitable means in promoting higher education. Except on the question of the admission of women to degrees, there have never been debates in convocation at which more interest has been shown. At the present moment, a keenly contested parliamentary election is being carried on in the university. The poll is open for five days; the voting is open, and may be done in person, or by voting-papers sworn before a justice of the peace and then sent in by mail. Sir John Lubbock, F.R.S., formerly vice-chancellor, represented the university for many years as a liberal, but not a 'home-ruler;' and he is now opposed by Mr. Frederick Harrison, the Gladstonian candidate.

In connection with the Colonial and Indian exhibition, a very useful series of conferences are being held in the Conference hall of the exhibition. Many of these are devoted to an exposition of the resources of some particular colony — to various industrial products and questions — and to such subjects as the federation of the colonies, etc. One day was devoted to the subject of the position of science in colonial education, which was introduced in a very exhaustive paper by Mr. William Lant Carpenter.

The colonies to which Mr. Carpenter had directed his attention were, Canada generally; in South Africa, the Cape of Good Hope and Natal; western and South Australia, Victoria, New South Wales, Queensland, New Zealand, and Tasmania; the last of which, unfortunately, was not represented at the present exhibition. An account of the present condition of scientific education in each of these colonies was given, in primary, secondary, and grammar or high schools, in colleges and universities, and in museums, etc., for adults. The most perfect scheme of education was probably that of the little colony of New Brunswick, which was admirably arranged. This colony spent one-third of its entire revenue on education, and one-eighth of its entire population in 1885 received instruction in hygiene. There was a universal desire in the colonies to realize as far as possible Professor Huxley's idea that a system of public instruction should be an educational ladder reaching from the gutter to the university.

As a general conclusion, Mr. Carpenter thought that the claims of science to a place in state-aided primary education were more fully recognized than in the old country; and this, not merely be-

cause it was the only foundation upon which a system of technological education could be securely built, but for its value in drawing out the minds of the pupils. As regards the branches by which the time-honored routine of subjects may be most beneficially varied, precedence was almost universally accorded to drawing, and to the objective presentation of the elements of science. In secondary grammar and high schools, science scarcely occupied a position equal to that in corresponding English schools; but there were many signs of improvement in this respect. In the colleges and universities of the older colonies, the classical and academic influence was still very strong, while in the newer ones the claims of scientific education to be put on an equal footing with literary were recognized. Great as had been the progress of public opinion in England during the last few years on the importance of science as an element in education, the author was disposed to consider it greater in the colonies in the same period. Certainly the development of that opinion to its present point had been much more rapid in the colonies than at home. There were many voluntary colonial associations for the promotion of science; and the author concluded his paper by throwing out the suggestion, that, if there were grave and practical difficulties in the way of an imperial federation of the Australian colonies, the establishment of an Australian association for the advancement of science, somewhat on the lines of the British and American associations for similar purposes, might not be beyond the reach of practical scientists; and he was strongly of opinion that such a federation would tend to strengthen 'the position of science in colonial education.'

The annual meeting of the Society of chemical industry is about to be held at Liverpool. The success of this society, which was only founded five years ago, has been remarkable, chiefly because it met a great want. It numbers over two thousand members, some resident in remote parts of the world. It has sections in the chief manufacturing districts of England and Scotland, such as Newcastle, Manchester, Birmingham, Bristol, etc. Its journal, issued monthly, is a very valuable record of industrial chemistry; the abstracts of patents, and of papers in foreign journals, being a special feature in it.

The experimental farm of the Royal agricultural society has recently been visited by distinguished colonists, as well as officially by the members of the society. It was started in 1877 to put to a practical test the relative manurial values attributable to the consumption of certain feeding-stuffs, which, on chemical considerations, should

differ widely in their fertilizing effects on the farm. Among the manurially rich food, decorticated cotton cake has been employed. One important economical fact has been clearly brought out: viz., that even heavy dressings of concentrated soluble nitrogenous manures, whether ammonium sulphate or sodium nitrate, leave in the soil, when applied to cereal crops, no appreciable residue for the use of a succeeding crop. W.

London, July 3.

NOTES AND NEWS.

THE thirty-fifth meeting of the American association for the advancement of science will be held at Buffalo, from Wednesday morning, Aug. 18, until Tuesday evening, Aug. 24, 1886. For the third time, at intervals of ten years each, the association has accepted an invitation to hold a meeting in Buffalo. The local committee intend to make the meeting a great success; and members who were at the meeting of 1876 need only to recall it, in order to form an idea of what the coming meeting promises to be. To those who were not present, it is only necessary to state that the facilities which the city offers are all that can be desired, both in regard to rooms for the several sections and in hotel accommodations, while the health and comfort of the city in the month of August are well known. The headquarters of the association will be at the high school, and all the offices and meeting rooms will be in that building or in one of the schoolhouses near by. The hotel headquarters will be at the Genesee house. Board and lodging for members and their families may be had at the rate of \$1 to \$3 a day, and reduced rates have been obtained from many railroads. A special circular in relation to railroads, hotels, and other matters, has been issued by the local committee. In order to take advantage of these arrangements, members who have not received the local committee's circular should send for a copy at once. Arrangements for excursions and receptions will be announced by the local committee. The officers of Sections D and H have issued special circulars relating to the meeting, which can be had by addressing the respective secretaries. Special information relating to any of the sections will be furnished by their officers. In Section E special attention will be given to the problems connected with the Niagara Falls and its gorge.

— Two Italian physiologists have recently been experimenting upon the effect of various drugs on the sense of taste. They find that the prolonged application of ice removes the sensibility for all tastes, — sweet, sour, salt, and bitter. The effect

of cocaine is to destroy the sensibility for bitter only. All other substances can still be tasted, but the application of a bitter substance yields only a sensation of contact. The removal of the sensibility remains the longer, the longer and more intense the application of the cocaine. Of course, the effect is only transient. They find other substances that reduce the sensibility for bitter taste; but cocaine seems to be the only one which selects all the fibres that conduct the sensation of bitter, and paralyzes them. Other substances, such as caffeine and morphia, diminish the discriminative sensibility between different intensities of bitter. The application of a two-per-cent solution of sulphuric acid has a peculiar effect. It makes distilled water taste sweet, and even makes a quinine solution have a sweet taste, but this only at the tip of the tongue; elsewhere it tastes bitter, as usual. These experiments are particularly important because they are the first that promise a rational application of the law of specific nerve-energy to the sense of taste. They seem to suggest the supposition of separate fibres for the conduction of separate tastes, and thus make close connection with the recently discovered hot and cold points in the skin, which are the terminal portions of nerve-fibres for the separate conduction of sensations of heat and cold.

— Protap Chandra Roy of Calcutta, secretary of the Dātavya Bhārata Kāryālaya, has issued an appeal for aid in rescuing the ancient Indian literature. The Dātavya Bhārata Kāryālaya has, within the course of the last eight years, printed and gratuitously distributed two editions of the Mahābhārata in Bengalee translation, each edition comprising nearly three thousand copies. The fourth edition of the Mahābhārata (the third of the series for gratuitous distribution) has been commenced, and it will take some time before it is completed. One edition of the Harivāṇṇa, comprising three thousand copies, has been exhausted. The Rāmāyana also, that was taken in hand, has been completed, the text of Valmiki being published with a translation. Roughly estimated, the Bhārata Kāryālaya has distributed up to date nearly twelve thousand copies of the Rāmāyana, Mahābhārata, and the Harivāṇṇa taken together, and that number will swell to eighteen thousand, when the fourth edition of the Mahābhārata shall be complete. Leaving aside the arithmetical results of the Kāryālaya's operations, it might fairly be presumed that the genuine demand for eighteen thousand copies of the sacred books of India represents a degree of interest taken by the people in the history of their past that is certainly not discouraging. An English translation of the Mahā-