

agents. Mr. Delcommune, who spent ten years at the factories and stations on the Kongo, will probably be its leader.

The announcement of Dr. Holub's death is denied by the latest telegraphic news. Holub left Austria a few months ago, with his wife and a few servants, to explore the country north of the Zambezi, and some weeks ago news was received that a European was murdered thereabout. It seems that this report gave rise to the rumor of Holub's death.

America.

The Geographical society of the City of Mexico announces its intention of resuming the publication of its journal, which was discontinued in 1882.

Dr. R. Bell's report on the Alert expedition to Hudson Bay, which is contained in the last 'Annual report of the geological survey of Canada,' shows how little is known of those countries. As the object of the expedition was the relief of the meteorological stations in Hudson Strait and Bay, Bell had no opportunity of leaving the ship for any length of time. However, his observations are the only ones we have referring to this vast district, and as he has carefully availed himself of every chance the movements of the ship gave him, he offers a great deal of new material. The author, who is thoroughly acquainted with the Hudson Bay Basin, through his extensive travels and numerous researches, gives a general sketch of the distribution of strata in Hudson Bay, and makes it probable that the whole of this vast basin is composed of flat-lying paleozoic strata. His observations lead him to the conclusion that during the glacial period an enormous glacier filled Hudson Strait, and flowed east towards the Atlantic Ocean. A southern branch seems to have come from Ungava Bay. It is very desirable that a geographical expedition to Hudson Bay be organized, as the coast is only known in its general outlines, and no scientist has ever set his foot on the greater part of these districts. Since Fox's journey to Fox Channel, only a few whalers have entered this strait; and the coasts, which are within easy reach from our harbors, and are of considerable importance on account of the whale, walrus, and seal fisheries, have never been explored.

Australasia.

The New-Guinea company's steamer *Ottilie* has ascended Augusta River, in the German part of New Guinea. It was found navigable for a considerable distance. Having sailed three days, the water was found to be too shallow to continue the journey in the steamer, which drew eleven feet of water. The party ascended the river two and a

half days farther in a steam launch, and returned only on account of the want of provisions. Measuring on a straight line, their farthest point was 156 nautical miles distant from the mouth of the river, and 74 miles from the north shore of the island. The existence of a navigable river of this size will be important for the development of the colony.

NOTES AND NEWS.

THE fourth annual catalogue of the Chicago manual training school is very encouraging. Although the regular school exercises were only begun in February, 1884, the total number of pupils enrolled is now 190. The course is a three years' one, and embraces instruction in mathematics, science, language, drawing, and shop-work, during the entire period. The requisites for admission are, that the candidate be at least fourteen years of age, and be able to pass a satisfactory examination in reading, spelling, writing, geography, English composition, and arithmetic. The school has a well-equipped wood-room, foundry, forge-room, and machine-shop, and ample apparatus for teaching the various subjects in which instruction is given. Under the efficient direction of Dr. Belfield, the successful future of this institution is assured.

— Perhaps no university chair in the world has had such a succession of distinguished occupants as has the Smith professorship of the French and Spanish languages and belles-lettres at Harvard. The professorship was established seventy years ago, and George Ticknor held it for nineteen years. His successor was Henry Wadsworth Longfellow, who held it for eighteen years; and James Russell Lowell, who has just resigned, held it for thirty-one years.

— In an account in *Modern language notes* for February, Mr. Calvin Thomas says that of the 176 names of those in attendance at the recent convention of the Modern language association at Baltimore, seventy per cent appeared to be English or American, and twenty per cent were obviously German. Of the total number in attendance, seventy-eight were teachers engaged in modern language work, and of this last number, sixty-five were engaged at colleges and universities. These sixty-five came from eighteen different states, as follows: from Maryland, 11; Massachusetts, 8; Pennsylvania, 8; Virginia, 6; Ohio, 4; South Carolina, 4; New Jersey, 4; New York, 3; Rhode Island, 3; Connecticut, 3; Indiana, 3; Michigan, 2; Kentucky, Louisiana, Delaware, Illinois, Tennessee, and Nebraska, each 1. These figures afford at least a rough criterion as to how far the

association has come to be truly representative of America.

— Professor Conrad of Halle has an article in the *Allgemeine zeitung* of Jan. 4, criticising the system of giving stipends to students, which now prevails at the German universities.

— *Nature* prints an account of a meeting, lately held, of the Association for promoting a teaching university for London, at which the second report of a sub-committee on the subject was received. At a meeting held in December, 1885, the committee were instructed to open communications with the governing bodies of the University of London, University college, King's college, the Royal college of physicians of London, the Royal college of surgeons of England, and the various medical schools of London, as well as with the council of legal education, for the purpose of promoting the objects of the association on the basis of that report. The committee have been informed by the senate of the University of London, and by the councils of University college and King's college, that committees of those bodies had been appointed to consider the objects and proposals of the association. The council of King's college have adopted a resolution to the effect that "the council, while reserving their opinion as to the details of the scheme laid before them by your committee, approve generally of the objects which the association has in view." The subject having been brought before the council of University college, they adopted a resolution to the following effect: "That this council do express a general approval of the objects of the association, which are as follows: 1°, the organization of university teaching in and for London, in the form of a teaching university, with faculties of arts, science, medicine, and laws; 2°, the association of university examination with university teaching, and direction of both by the same authorities; 3°, the conferring of a substantive voice in the government of the university upon those engaged in the work of university teaching and examination; 4°, existing institutions in London, of university rank, not to be abolished or ignored, but to be taken as the bases or component parts of the university, and either partially or completely incorporated, with the minimum of internal change; 5°, an alliance to be established between the university and the professional corporations, the council of legal education as representing the Inns of Court, and the Royal colleges of physicians and of surgeons of London." A conference between the deputation of the committee named in that behalf and the committee of the senate of the University of

London was held on Nov. 23 at the University of London; and, at the conclusion of a long and important discussion, the vice-chancellor gave to the deputation the assurance that the general disposition of those present was to move in the direction indicated by the association. Various other institutions have virtually expressed approval of the object of the association, and, while awaiting some further communication from the senate of the University of London, which it is understood will be made, either to them, or in an independent way to the university teachers of London, the committee propose to take steps for bringing to the notice of her Majesty's government the need which exists for the co-operation of the government in order to promote university teaching in London.

— Professor Hunt of Princeton has in course of preparation a book entitled 'English prose and prose writers,' which will be published in the spring. It is intended to be a text-book for advanced instruction in English prose style.

— It is reported by the *Athenaeum* that, on the advice of Dr. W. Wright of Cambridge, and Prof. D. H. Müller of Vienna, the Oriental congress at Stockholm, and also the adjudication of the King of Sweden's two prize essays, are put off to 1890.

— The *Athenaeum* is authority for the statement that the Prince of Wales has undertaken, at an early date, to open the new buildings of the College of preceptors in Bloomsbury Square, recently erected at a cost of over £16,000. The council hopes, in its new quarters, to carry on with increased efficiency the manifold work of the institution, the importance of which may be measured by the fact that more than fifteen thousand pupils, representing nearly four thousand schools, were examined by the college during the past twelve months. The council also proposes to start a fund for the purpose of establishing a training college, or of promoting some other scheme for the training of teachers; and in the mean time it is intended to set apart £300 a year, to be awarded in the shape of scholarships for intending teachers.

— The paper on 'The mutual relations of the colleges and academies' read before the convention of the University of the state of New York, in July last, by Professor Hewett of Cornell university, has been issued in pamphlet form.

— The returns from the University of Berlin this winter show an unexampled activity. The total number of students is 5,357, the largest ever reached at a German university. Of these,

794 are matriculated in the faculty of theology, 1,282 in the faculty of law, 1,297 in the faculty of medicine, and 1,984 in the faculty of philosophy: 4,062 of the students are from Prussia; while the rest of Germany furnishes 740. The foreign students number 381, the Russians coming first with 198, America following with 149. In the faculty of philosophy are 715 students from gymnasias, and 402 from real-gymnasias. The total number of instructors is now 288, including 16 in theology, 22 in law, 103 in medicine, and 147 in philosophy.

— M. Justi, who has received a flattering call to the University of Vienna, will not leave his chair of the history of art at Bonn.

— The *Pacific science monthly*, edited by Rev. Stephen Bowers, is to be issued as a bulletin of the Ventura society of natural history in the future, and published quarterly or as occasion demands.

— E. L. Greene, who has made a name for himself by his 'Studies of the botany of California and parts adjacent,' has been lately appointed a professor in the University of California.

— The March number of the *Popular science monthly* will contain a portrait of the late Prof. E. L. Youmans, engraved on steel by Schlecht. The likeness is considered remarkably vivid, while the execution of the work is much superior to ordinary book-plates.

— Henry Hemphill, the renowned brick-layer and conchologist, has presented a collection of a thousand species of shells to the San Diego society of natural history. A few years ago he gave the State normal school a series of over eight hundred mollusks, collected by himself in the west part of the United States, which was by far the best public collection on the coast.

— In the Clarendon press series of school and college text-books, three new volumes have recently appeared. Professor Sweet's 'Second middle English primer' is meant as a continuation of his 'First middle English primer,' and consists of a series of selections from Chaucer, together with a brief grammatical outline and a key to phonetic transcription. Mr. Sloman's edition of the 'Adelphi' of Terence is excellent as an elementary book, and the worst that can be said of Heberden's edition of the 'Medea' is, that it contains nothing new.

— Hungary has within its borders 143 towns, in 74 of which the Magyar element predominates, in 24 the German, in 24 the Slavic, in 6 the Roumanian, and in one each the Servian and Bulgarian.

Thirteen towns are not marked by the distinct preponderance of any nationality.

— The population of Africa is estimated at two hundred millions, of whom forty per cent are negroes, and forty per cent Hottentots and Bushmen.

— The educational bureau, or museum, and the pedagogical library that Superintendent Draper is building up in connection with his department at Albany, deserve encouragement. The collections will not only be valuable in themselves, but they should be the source of inspiration and suggestion to numbers of teachers.

— The geological survey is receiving data daily concerning the recent earthquake of Feb. 6 in southern Indiana, Illinois, a small portion of Kentucky, and east central Missouri. The only accurate time-observation was that made at Terre Haute, Ind., by Prof. T. C. Mendenhall, who gives the time as 4:15:06 A.M., Feb. 6. The newspaper reports indicate an area of about 75,000 square miles in the states just given. The greatest intensity was in south-western Indiana and south-eastern Illinois. Efforts are being made to obtain the accurate boundary of the area covered, by means of circulars sent out by the geological survey.

— Mr. Carlisle Terry, one of the most efficient officers of the coast survey, who has been in charge of the magnetic observatory at Los Angeles, has been compelled, on account of ill health, to retire temporarily from the service, and has been ordered to his home at Columbus, Ga. The results of Mr. Terry's thorough work have been most important, and his services will be greatly missed.

— Among the reported discoveries for the prevention of rabies is that of Dr. Fernandez of Barcelona, who claims that a dog that has been bitten by a viper never has rabies, and cannot become rabid when inoculated. He has inoculated dogs with viper's poison, and he holds that under no circumstances will they ever become rabid.

— An automatic collecting or toll-taking device, to be attached to telephones at public or pay stations, has been invented. The mechanism in the telephone-box is so arranged that the telephone will not operate until a coin of a certain size and weight, dropped into a slit in the front, acts upon a switch-lever, thereby making electrical connection between the transmitter and the line wire. The act of hanging the receiving-telephone, after use, in the place provided for it, drops the coin into a till and releases the switch-lever, thereby breaking the electrical connection and 'setting the trap' for the next user.

— Captain Gates of the ship *L. Schapp* has reported to the U. S. hydrographic office that on April 19, when off Cape Horn, on a voyage from San Francisco to Liverpool, the temperature of the water suddenly rose from 42° to 44°. Judging from this that the vessel was too close inshore, he hauled off three points, and, after standing on this course for four hours, the temperature fell to 42°. The captain stated that on a previous voyage he had noticed this warm belt, and judges that it does not extend more than ten miles offshore. He believes he would have gone ashore if he had continued on his first course half an hour longer. He had not seen the sun for twelve days.

— The longest completed tunnel in the world is at Schemnitz in Hungary. It is 10.27 miles in length, with a cross-section of 9 feet 10 inches by 5 feet 3 inches, and is used for drainage purposes. The new Croton aqueduct tunnel, now in course of excavation near this city, will be much the longest tunnel in the world. When completed, it will be nearly 30 miles long, with a section much larger than that of the Schemnitz tunnel, being about 16 feet in diameter. Twenty-two miles have already been excavated.

— The International statistical institute will hold a meeting in Rome early in April.

LETTERS TO THE EDITOR.

*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

The natural method of teaching languages.

Will you permit me to call attention to two misstatements in Mr. Stern's article on 'The natural method of teaching languages,' which appears in *Science* of Jan. 21? On p. 69 he says, "Why is it that the old method . . . could be shaken in its very foundation to such a degree that one of its warmest defenders writes but lately, 'It is evident to me that the old grammatical method cannot survive the assault of the natural method'?" The writer referred to as 'one of the warmest defenders' of the old method has been conspicuous and outspoken in discrediting 'the old method,' both in theory and practice, for many years, and, had his name been quoted, the absurdity of the above would have been at once apparent.

Farther on, Mr. Stern says, "It would seem strange . . . that an educational journal which is not friendly [*sic*] inclined towards the method should have recently been forced to admit that 'the subject is now attracting great attention in the secondary and higher schools.'" The expression 'forced to admit' is misleading. Possibly it was intended to be so. It would be interesting to learn the exact nature of the *forcing*. By the same token it might be claimed that any statement of fact is a forced admission. It was simply given as an excuse for introducing the matter as the subject of *Interchange*. Perhaps Mr. Stern would claim that our statement that

"there are twenty thousand secondary teachers in the United States" was a forced admission, but we have never so regarded it.

THE EDITOR OF THE ACADEMY.
Syracuse, N.Y., Jan. 22.

The submerged trees of the Columbia River.

The phenomena which Capt. C. E. Dutton has so well described under the above heading in No. 208 of *Science* were observed by me in the autumn of 1870, when, in the course of preparations for a topographical and geological survey of Mount Rainier, I made a trip from Portland to the Dalles and back, and later, on my return from Mount Rainier *via* the Dalles to Portland, during the month of November of the same year. The submerged trees excited my vivid interest during these trips up and down the river; and during an enforced stay at the Cascades on one of these occasions, I made some investigations in the vicinity, which, with information I obtained from old Hudson Bay trappers and Indians, suggested to me an explanation of the backing-up of the river different from that offered by Captain Dutton. This explanation, which was embodied in a somewhat popular address delivered by me before the American geographical society in New York on March 13, 1887 (Bulletin No. 4, session 1876-77, p. 11), I venture to repeat here, for the reason that Captain Dutton assures me that he had not known of my publication on the subject, and that the explanation had not been suggested to him at the time of his investigations. It is briefly this:—

1. The valley of the Columbia River at the Cascades is a cut, considerably broader than the actual stream-bed, through over 3,000 feet of beds of basalt and basaltic breccia, which here form the axis of the Cascade range, and which rest on a loosely aggregated bed of conglomerate carrying leaf-remains and trunks of trees, sometimes petrified, sometimes merely carbonized, apparently of miocene age. This bed of conglomerate is seen to outcrop about at the river-level at the foot of the Cascades: therefore in its cutting-down or corrosion the Columbia River had already reached this conglomerate bed below the falls, and above was within thirty feet of it.

2. The river at the Cascades is a narrow boiling stream, rushing down over immense broken masses of basalt, and between steeply cut banks of basalt; which banks are, if I recollect rightly, somewhat higher than the broad forest-covered stretches of the valley which extend on either side of the stream to the base of the steep bounding cliffs. In this stretch on the north bank I observed an old stream-bed filled with rounded pebbles, through which at least a part of the stream once ran.

3. The Indian tradition above referred to says that there once existed a natural bridge at the Cascades, and that the ancestors of the present tribes (probably at no very distant period) used to cross the river here dry-shod. The form of the banks at the head of the stream lends probability to the truth of this tradition, for they appear like the rude abutments of such a bridge, which had been left after its destruction.

4. The submerged stumps of trees which line irregularly the banks of the river above the Cascades are of the same species, and generally about the same size, as the older of those which clothe the steep