part of the book, however, is devoted to a description of Tunis and neighboring towns. Of course whatever a Frenchman writes about such a recent acquisition as Tunis must be received with caution, and much that is here said about the Roman ruins is probably exaggerated. The old Phoenician Carthage has entirely disappeared, and of the Roman town but little remains. Utica, too, is no more to be seen, and, in fact, the province of Carthage—once the granary of imperial Rome—is little more than a desert. Still as our author says: "Although there is scarcely a vestige of Carthage remaining, its site alone attracts the tourist to the top of the ancient Brysa." In conclusion, it may not be amiss to point out that the traveller who designs visiting Tunis for the sake of viewing eastern barbarism would better bestir himself, as the French are reported to be improving the place in the true Parisian fashion.

GEOGRAPHICAL NOTES.

A DISCUSSION of the hydrographic observations made on the expedition of 1883 to Greenland seas has been published by Nordenskiöld and Hamberg in the Proceedings of the Royal geographical society. There are numerous water sections; and the discussion is of much value and interest for the hydrographer, but too extensive to summarize here.

During the past summer, Captain David Gray, the well-known whaler and explorer, visited the east coast of Greenland at a high latitude. The floes extended this year very far west from Spitzbergen, at least 180 miles at Prince Charles Foreland. In latitude 74° the edge was in longitude 14° W.; and in latitude 71°, in 16° W. In August he sailed along the coast from Shannon Island to the entrance of Scoresby Sound, a distance of three hundred miles, sometimes in sight of the land-water, and sometimes farther off. On the Liverpool coast he passed between the land-ice, but found no whales. The land-ice was sufficiently open for a steamer to have forced her way through it, which is very rarely the case so early in the season.

The Danish expedition to east Greenland has returned to Copenhagen after an absence of twenty-nine months. The latitude reached was 66° 8′, about forty miles farther north than Nordenskiöld's vessel attained in 1883. There have been no casualties, and the health of the party is excellent. Many photographs and interesting ethnological objects were brought back. Lieutenant Holm, commanding, considers that it is now settled beyond a doubt that no early Scandinavian remains occur on the east coast.

'Island, land und leute, geschichte, litteratur und sprache,' by Dr. Ph. Schweitzer, has been published by W. Friedrich in Leipzig. There has been no complete work on Iceland in the German language hitherto; but the present one does not seem in all respects satisfactory, and parts of it are characterized as unscientific and fanciful by German critics.

A very useful and complete atlas of Russia has been prepared by J. Poddubnyi, and published by A. Deubner, St. Petersburg, under the title of a 'Russian school atlas,' at the small price of one ruble. It would seem to be far more than an ordinary school atlas in the sense commonly understood, and to be well worthy a place in the library of all interested in geography; being full of maps showing meteorology, distribution of races, religions, etc., and many diagrams.

J. Hughes and F. Dunsmuir have returned to Juneau, Alaska, from the head waters of the Yukon. They descended the Lewis branch to the Salmon River, which was ascended to its head waters. Good placers were found on the bars. Some twenty prospectors will remain in the region all winter. They were said to average seven or eight dollars a day per man in gold dust. These diggings are mostly in British territory.

News from the whaling fleet to Nov. 3 states that one hundred and seventy-four whales had been taken. No further casualties are reported, and the vessels are beginning to arrive at San Francisco.

Lieutenant Allen and party of the Copper River expedition, now returned, are said to be seriously affected by scurvy, due to their privations.

The revenue cutter Bear, formerly of the Greely relief expedition, has sailed from New York for the western coast, where she will be employed in Alaskan waters on revenue duties, and to assist disabled vessels of the whaling fleet during the season. She will hardly reach San Francisco before February, 1886.

Lieutenant Greely is in Scotland, the guest of Lord Roseberry, and is to deliver an address before the Scottish geographical society Nov. 19. His health is said to be improving.

Dr. Stejneger of the national museum has an illustrated article on the Commander Islands, containing much of interest, in the last number of the *Deutsche geographische blätter*.

ASTRONOMICAL NOTES.

Spectral analysis of atmospheric elements. — M. Janssen announces (*Comptes rendus*, ci. 649) that he has taken up the special study of the absorption spectra of gases, mostly those composing

our atmosphere. The observatory at Meudon has special facilities for this work; and already in a tube of oxygen 60 metres long, under a pressure of 27 atmospheres, M. Janssen states that there are absorption phenomena visible beyond A, and some bands in other parts that are not in the solar spectrum. These he attributes to the increase of pressure over that of our atmosphere.

Personal equation in observing circumpolars. — In rediscussing Wagner's Pulkowa transit-observations of Polaris, 51 (H) Cephei and δ Ursae Minoris, to determine the constant of nutation, Dr. L. de Ball finds an interesting and strikingly constant difference between the right-ascensions observed by 'eye-and-ear' and on the chronograph. His results are as follows: —

Method.	α Ursae Minoris.	51 (H) Cephei.	δ Ursae Minoris.
	s. *s.*	*s.* *s.*	*s.* *s.*
Eye-and-ear...	38.71 ± 0.043	11.72 ± 0.026	53.08 ± 0.020
Chronographic	39.06 ± 0.051	12.01 ± 0.027	53.36 ± 0.020

The above are the seconds of right ascension for 1865.0.

Latitude of the Bordeaux observatory. — M. Rayet has determined (*Comptes rendus*, ci. 731) the latitude of the new observatory at Bordeaux to be + 44° 50′ 7″.23; but as it rests entirely upon measures of the zenith-distance of fundamental stars, and as there appears to have been no investigation of flexure or of constant error in the nadir-point, it may possibly be in error by some tenths of a second.

Asteroids 251 and 252. — The asteroid discovered by Palisa on the 4th of October (*Science*, vi. 333), while searching for Eudora, turns out to be a new one, and is accordingly number 251. Eudora was observed at Vienna on October 4 — 11.3 magnitude. Perrotin's new asteroid of October 27 becomes number 252.

The total solar eclipse of 1885, September 9. — The last number (835) of *Nature* gives several letters from observers of the recent eclipse of the sun visible in New Zealand. There are no reports from the government parties organized by Mr. Ellery, but it is stated that bad weather seriously interfered with their observations. Mr. Graydon made a series of sketches of the corona from Tahoraite, — a point well within the belt of totality, but some forty miles north of the central line. Five sketches were made during the short time of totality, and their agreement confirms the observer's impression of the fixity of the phenomenon. A woodcut from these sketches shows five or six long rays (besides a large number of shorter ones) projecting from the sun's limb, the longest ray being some two or three diameters of that body in length. A dark rift was observed in the corona, and near this rift a red flame was noticed by some of the bystanders to shoot out just before the end of totality. Ten instantaneous photographs were obtained by a party at Blenheim; and at Mastertton "Messrs. McKerrow and party, who had camped at the foot of Otahuao, proceeded to the top and fixed their instruments amid driving snow and hail." They were rewarded by the sky clearing off just before totality, and four photographs were obtained. Other observations were made at Wellington and Dryertown.

NOTES AND NEWS.

THE following papers were entered to be read at the meeting of the National academy of sciences in Albany, beginning Nov. 10: S. P. Langley, Obscure heat; John S. Billings, A new form of craniaphore, for taking composite photographs; A. S. Packard, The carboniferous merostomatous fauna of America; E. C. Pickering, Stellar photography; E. D. Cope, Two new forms of polyodont and gonorhynchid fishes from the eocene of the Rocky Mountains; (by invitation) O. T. Sherman, Yale college observatory, New lines on the spectra of certain stars; C. H. F. Peters, Certain stars observed by Flamsteed, and supposed to have disappeared; James Hall, Remarks upon the international geological congress at Berlin, with a brief historical notice of the origin of the congress; James Hall, Notes on some points in the geology of the Mohawk valley; Simon Newcomb, When shall the astronomical day begin? (by invitation) William B. Dwight, Primordial rocks among the Wappinger valley limestones, near Poughkeepsie, N.Y.; C. H. F. Peters, The errors of star catalogues; A. Graham Bell, Preliminary report on the investigation relating to hereditary deafness; C. A. Young, The new star in the nebula of Andromeda; (by invitation) J. A. Lintner, Recent progress in economic entomology; J. W. Powell, Remarks on the stone ruins of the Colorado and the Rio Grande; (by invitation) Charles H. Peck, The New York state herbarium; (by invitation) T. H. Safford, The formation of a polar catalogue of stars; (by invitation) Otto Meyer, A section through the southern tertiaries; James Hall, Remarks upon the Lamellibranchiata fauna of the Devonian rocks of the state of New York, and the results of investigations made for the paleontology of the state; J. S. Newberry, Recent discoveries of gigantic placoderm fishes in the Devonian rocks of Ohio; J. S. Newberry, The flora of the cretaceous clays of New Jersey.

— The American public health association will convene at Washington, D.C., Tuesday, Dec. 8,