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,

at 10 o'clock A.M., and continue four days. The meetings will be held in Willard's hotel hall, on Pennsylvania Ave. The executive committee have selected the following topics for consideration at the meeting: 1°. The best form in which the results of registration of diseases and deaths can be given to the public in weekly, monthly, and annual reports; 2°. The proper organization of health boards and local sanitary service; 3°. Recent sanitary experiences in connection with the exclusion and suppression of epidemic disease; also the Lomb prize essays. In addition to other able and comprehensive papers expected to be presented at this meeting, the secretary has received notice of the following: Dr. J. S. Billings, Forms of tables for vital statistics; Dr. E. M. Hunt, Sanitary and statistical nomenclature; Dr. Charles H. Fisher, Statistics of consumption in Rhode Island for a quarter of a century; Dr. E. M. Hartwell, The German system of physical training; Dr. William Oscar Thrailkill, School hygiene, public and private; Dr. Joseph Holt, Sanitary protection of New Orleans, municipal and maritime; Dr. S. T. Armstrong, Maritime sanitation; Dr. P. H. Bryce, Small-pox in Canada, and the methods of dealing with it in the different provinces; Dr. Benj. Lee, The debit and credit account of the Plymouth epidemic; Dr. C. A. Lindsley, An epidemic of typhoid fever; Dr. O. W. Wight, Experiences in disinfecting sewers; Dr. J. N. McCormick, Progress of health work in Kentucky; Dr. Thomas F. Wood, Observation on the Cape Fear River water as a source of water-supply: A study into the character of southern river water; Dr. D. E. Salmon, The virus of hog cholera; George N. Bell, Hygiene of the dwelling; Dr. John Morris, The proper disposal of the dead; Dr. A. C. Bernays, The relation between micro-organisms and cells; Dr. W. H. Watkins, The layman in sanitation; Dr. R. Harvey Reed, Who is responsible for the iniquities of the third and fourth generations, and how shall they be avoided? Dr. W. John Harris, Carelessness the cause of disease. The committee on disinfectants will present quite a voluminous report (printed), embodying their investigations and conclusions on the subject of disinfection and disinfectants.

— The Massachusetts teachers' association will hold its forty-first annual meeting in the Girls' high school building, Boston, on November 27–28. The two volumes recently published by the association — the first a history of the association from its organization in November, 1845, with an abstract of its proceedings (1845–80); and the second a continuation of the above, with the addresses at the annual meeting in 1882 in full — may be obtained at twenty-five cents each, upon application to the treasurer, Alfred Bunker, Boston.

— Prof. E. Hitchcock writes from Geneva, N.Y., to announce that a portion of the skeleton of another mastodon has just been unearthed in Seneca Castle, N.Y., about five miles from Geneva. It was found, as is usual, at the bottom of a peat morass lately drained for farming purposes. The aggravating thing to the naturalist is that the bones most decisive in determining the species were not found, though all were remarkably sound and strong. The left tusk measured eight feet nine inches on its outer curve, and evidently was not the whole tusk. The two styloid bones were well preserved. The rest of the bones were vertebrae, about one-half the ribs, and many of the bones of the hand and foot, but no head or pelvis. The bones were discovered through Mr. F. B. Peck, a senior in Amherst college, and they are the property of this institution. The peat and muck were only three feet thick, which must account for the scarcity of the large bones.

— Capt. Charles Haley, of the schooner Genevieve, recently arrived at Philadelphia from Charleston, S.C., reports that on Oct. 29, at 10.30 A.M., when about thirty miles south of Frying Pan Shoal lightship, he had his main and mizzen masts carried away about twenty feet below the cross-trees. The weather was clear and pleasant, moderate swell, light breeze from W.N.W., and vessel going through the water at about four knots, heading N.E. by E., with all sail set. Noticing a small cloud to windward, of cirro-cumulus formation, and hearing a sizzling sound aloft, he sang out to clew up the topsails. The next moment the topsails gathered up in a bunch, and the main and mizzen masts were twisted off and taken overboard. At the same time the jib and foresail were flapping to windward with each roll, and he could have held an open umbrella over his head, there was so little wind. A few minutes afterward the sun came out bright and clear. About 2 P.M. the same day a gale sprung up from S.W., and blew for twenty hours. The mate said the small cloud that came down from windward looked like the first appearance that a cloud generally assumes when a water-spout is beginning to form.

— A New York *Herald* despatch of Nov. 16 announces that Vesuvius is again in a state of eruption. The lava is streaming down on the west side of the mountain, and some alarm is expressed, as the observatory authorities believe that

the eruption will become more serious than it is at present.

— In the second part of the first volume of the 'Supplementary papers' issued by the Royal geographical society there is a valuable map of central Asia, showing the territory between the Zarafshan and Amu-Daria Rivers. It was compiled from the latest Russian documents to illustrate Mr. E. Delmar Morgan's paper on the 'Recent geography of central Asia from Russian sources.' The map extends only to about 72° 30′ of longitude east from Greenwich, and therefore does not take in the sources of the Amu-Daria or the Oxus. Nevertheless, as it shows the glaciers of Tanimar and Fedshenko, and the hitherto almost unknown mountain regions of Badakshan, Bokhara, and Karateghin, it is of very considerable value. Mr. Morgan's article, containing as it does much information hitherto inaccessible to English readers, should also be borne in mind.

— The French government has just created, says *Nature*, a certain number of travelling-juries. This is a modified form of an institution established by the first republic. In the organic law of the Institut it was ordained that the Institut was to select yearly ten citizens to travel abroad and collect information useful to science, commerce, and agriculture. These scientific travellers will not be appointed by the Academy of sciences, or the whole Institut, but by a special administrative commission, on the basis of a competitive examination.

— A German traveller who has recently visited Macedonia makes, says the London *Times*, the following statement respecting the population of that country: "If people speak of the condition and the movement in Macedonia, they should be reminded that this Turkish province is perhaps the most checkered picture of nationalities of any country in Europe, and that not one of them possesses an absolute majority. In the east, round Salonica, and along the coast, the Greek element is very strong; but even the largest seaport place might be considered a Jewish town rather than a Greek centre. The west is the stronghold of the Albanians,—the most savage, most aboriginal, and most lawless nationality of our part of the globe. A considerable Slav population pushes itself between the Greeks and Arnauts; and distributed among Greeks, Slavs, and Arnauts, we find a large number of Turks and Wallachians. The latter are called in Macedonia mostly Zinzaras, or Tsintsaras, because in their dialect they do not pronounce the number five 'tchintch' (like their kin of Roumania), but 'tsints.' With regard to the number of the population as a whole and separately, it may safely be asserted that the various statements are entirely unreliable, the degree of exactness varying with the views and sympathy of the several authorities who make them. When a Russian general estimates the number of Bulgarians in Macedonia at 1,500,000, this figure may be as much assailed as the claim of the Greek notables when addressing a manifesto to the patriarch and the Porte, to be considered the representatives of 800,000 Greeks living in the province. If Macedonia is mentioned as the seat of political agitation, the Albanian districts of Janina and Scutari must be left out of consideration altogether. The other four great administrative districts remaining — Monastir, Salonica, Kossovo, and Seres — are stated to contain, in accordance with the proportionately most reliable figures, about 1,531,000 inhabitants, who are divided as follows: 410,000 Christian and 46,000 Mohammedan Bulgarians (Pomaks), 350,000 Albanians, 280,000 Turks, 145,000 Greeks, 120,000 Servians, 95,000 Zinzaras, and 40,000 Spanish Jews. The remainder consists of gypsies and foreigners. It may be added that the number of Albanians and Turks is probably taken too high; that of the Servians, on the contrary, too low."

— An expedition, under Dr. Bunge and Baron von Toll is to start next spring for the exploration of the New Siberian Islands, which, since Anjou's journeys in 1821–23, have only been visited by the ill-fated members of the Jeannette expedition, on their way to the mouth of the Lena.

— A French journal has recently called attention to the following good case of 'mental suggestion:' On July 14, 1884, Mlle. A. E. was put into the hypnotic condition by a friend who tells the story, and who says to her, "On Jan. 1, 1885, at 10 A.M., you will see me; I will come to wish you a happy new year; after this I will immediately disappear." Neither spoke of this until after Jan. 1. On that day Mlle. A. E. was in Nancy, and the narrator in Paris. "At 10 o'clock she heard a knock at the door, and saw me enter, and heard me wish her a happy new year in a loud voice, and suddenly disappear. She went to the window to see me as I went out of the door into the street, but I was not to be seen. In telling the story to a friend, she expressed surprise at seeing me in a summer suit of clothing at that time of the year. Of course, it was the suit I wore on July 14. In spite of my affirmations, she insists that I was really with her on New year's day."

— Reporting on the trade of Tamsui, China, the English commissioner of customs says that the trade in camphor is represented in the returns by such an insignificant figure that there is great

fear of its total extinction in the near future. The immediate cause of its rapid collapse may be traced to the eagerness of the Chinese to acquire by all possible means as much territory as possible. During the last three years hills thickly wooded with camphor trees have been burned over by the Chinese, in order to compel the savages to withdraw. Destruction on so large a scale, naturally tells on the camphor trade. Forests of camphor trees do still exist farther inland, but the absence of all beaten tracks across the mountains renders them difficult of access.

— M. Parize, director of the agricultural station of North Finistère, in Spain, reports a curious phenomenon resulting from the explosion of a tempered glass crucible. He heard one day a violent explosion in his laboratory, and, hastening into the room, saw on the table and floor, in a circle, a layer of glassy *débris* resembling crystals of sulphate of soda. The explosion was caused neither by a blow nor disturbance of the air. The grains varied in size from the head of a pin to a pea, with a few as large as a nut, but these were divided by cracks which would break them into analogous grains. An inkstand of pressed glass exploded in a similar manner not long ago in Boston.

— The small volume just published by Prof. Rudolph Eucken of Halle, entitled 'Prolegomena zu forschungen über der einheit des geisteslebens,' and which is published as the methodological part of a forthcoming comprehensive work on the subject, is as remarkable a bit of philosophical word-mongering as we have lately seen. The author is an expert in terminology, and in this thick pamphlet advances from the history of terms to the invention of them. Instead of psychological he proposes the term 'noological' as more comprehensive because including spirit. Instead of system, the word 'syntagma' is introduced to include large collective tendencies and unities of action as well as of thought. 'Innensicht,' 'vollthat,' 'arbeitswelt,' 'kombinierendes thun,' which are hardly translatable, and many far more familiar words, are given a precise and technical not to say strained meaning, as instruments to help the author in the impending self-delivery of his system. His problem is stated in so manifold ways—is so hard for him to state in fact—that its solution must be difficult indeed. It is, in general, whether there is a unitary character to mental life and the world; whether one force animates all the fulness of being; or, again, whether the universe is one collective act, or fact, with any character so distinctive that it may be described. The texture and quality of the thought is thin and poor. There is no index to speak of, no *résumé*, and little promise of reward to the diligent reader.

— Aug. Boltz concludes, in a pamphlet on 'The Cyclops, an historical people, deduced from language,' that Cyclops is a perverted form of Siclos, or Siculos, the name of an Italo-Pelasgic tribe inhabiting the eastern portions of Sicily; and that it has no proper etymological connection with the words κύκλος and ὄψ. Nevertheless, he thinks that the mythological one-eyed giant of Homer may have originated from some instance of natural monstrosity in real life, that had been encountered by the first Greeks who visited the island.

— In a paper read before the Anthropological institute of Great Britain, Sir J. Park Harrison has stated that, according to his observations, among the English the great toe is longer than the second; but as the ancients have represented in statuary the second toe as the longer, this must have arisen from a different proportion prevailing in Greece and Italy. Barroil finds (*Arch. per l'antrop.*, vol. xv.), however, as the result of 447 measurements of Italians, that 62 per cent have the great toe longer; and although it is true that, of twelve antique statues in the galleries of Florence, all but two have the second toe longer, he thinks this has arisen from a conventional feeling, which regarded that shape of the foot as more beautiful. It is found to be the case frequently that the relative length varies in the two feet. While the great toe is the longer in the majority of mankind, the case seems to be reversed in the mongoloid and negro races.

— The Russian government has summoned the principal ironmasters and manufacturers of the Ural and middle Russian districts to attend a conference at St. Petersburg, at which delegates of the various industries will be present, in order to discuss the steps that should be taken to improve the iron industry of Russia. Since 1874 the production of pig iron has not increased, and in some years has decreased. Instead of being, as Russia once was, one of the leading iron-producing countries, Austria produces twice as much, France nearly four times, Germany five times, and England, once an importer of Russian iron, now produces ten times as much. The Moscow *Gazette* ascribes this to an antiquated system of commerce, onerous railway rates, and insufficient protection on the part of the tariff.

— A large falling-off in the immigration is reported by the chief of the bureau of statistics. The number arrived during the year was 395,346, as against 518,592 during the preceding year, and a falling-off of fifty per cent since 1882, when the arrivals were 788,902.