

the Government of Erivan. Altogether, the mortality is, however, very great, and it is compensated only by a great number of births. As to the density of population, the 224,221 square kilometres occupied by the Northern Caucasus have 10.3 inhabitants per square kilometre, which figure reaches as much as 13.6 in Transcaucasia (248,445 square kilometres), where the density of population is the same as in European Russia. The Governments of Kutais (the valley of the Rion), Erivan, and Tiflis have respectively 33.6, 20.8, and 17.8 inhabitants per square kilometre.

AMONG the recent additions to Chinese scientific literature are translations of Margutti's "Elementary Chemistry" and Fresenius's "Chemical Analysis." These works have been translated into Chinese by M. Billequin, one of the professors of the Jung Wên Kwan, or Foreign College, at Peking.

THE Secretary of State for India in Council has appointed Mr. David Hooper, F.C.S., of Birmingham, to the Nilgiri Government Cinchona Plantations in the Madras Presidency.

THE additions to the Zoological Society's Gardens during the past week include a Ludio Monkey (*Cercopithecus ludio*) from West Africa, presented by Mr. F. W. Robinson; a Macaque Monkey (*Macacus cynomolgus* ♂) from India, presented by Mr. E. Drew; a Vulpine Phalanger (*Phalangista vulpina*) from Australia, presented by Mr. J. C. Martin; a Central American Agouti (*Dasyprocta isthmica*) from Central America, presented by Mr. Hugh Wilson; a Herring Gull (*Larus argentatus*), European, presented by Mr. Thomas Daws; a Common Viper (*Vipera berus*), British, presented by Mr. H. German; a Burchell's Zebra (*Equus burchelli* ♀) from South Africa, three Michie's Tufted Deer (*Elaphodus michianus* ♂ ♀ ♀), four Darwin's Pucras (*Pucrasia darwini* ♂ ♂ ♂ ♀), an Elliot's Pheasant (*Phasianus ellioti* ♂) from China, deposited; three Corn Buntings (*Emberiza miliaria*), British, purchased.

OUR ASTRONOMICAL COLUMN

SOUTHERN COMETS.—Dr. Oppenheim of Berlin has published elements of the comet discovered by Mr. Ross of Elsternwick, Victoria, on January 7, founded upon the Melbourne observations in *Astron. Nach.*, No. 2579, though, as he remarks, they were calculated with difficulty, owing to the existence of three oversights in the seven positions there given; hence their connection for an orbit would involve a troublesome tentative process. The position for January 17 is in error nearly two degrees.

Mr. Tebbutt has also computed elements from his own observations at Windsor, New South Wales, on January 19, 23, and 28, which represent closely the observation on February 2, the last he was able to obtain, the comet having become very faint; on January 19 he had considered it just beyond naked-eye vision. He remarks upon the discordance of his elements with those calculated by M. Barachi of the Melbourne Observatory, and observes: "I cannot account for these discrepancies, unless there be some error in the Melbourne data." We subjoin both orbits:—

	Tebbutt Perihelion Passage, 1883, Dec. 25 ^h 3003 ^m 38	Oppenheim Dec. 25 ^h 3027 ^m
Longitude of perihelion	125 44 24	125 46 12
" " ascending node	264 24 0	264 25 14
Inclination	65 0 55	65 0 51
Log. perihelion distance	9.491046	9.49094

Motion retrograde.

The time of perihelion passage is for the meridian of Greenwich, and the longitudes are referred to the mean equinox of 1884.0. It will be seen from the close agreement of the two orbits how completely Dr. Oppenheim succeeded in eliminating the Melbourne errors from his work.

In a communication to the *Observatory* of the present month Mr. Tebbutt refers to a notice in the Sydney journals copied from a Tasmanian newspaper, reporting that a bright comet had been seen at New Norfolk at 4 a.m. on December 27, bearing about east, and a few degrees above the horizon; he had searched for

it in the morning sky without success. In the *Sydney Morning Herald* of March 5, Mr. Tebbutt writes:—"Within the past few days I have received, through Commander J. Shortt, R.N., the Meteorological Observer at Hobart Town, communications respecting a fine comet which was seen in Tasmania on December 25 and 27 in the morning sky. It is described as rising above the eastern horizon a few minutes before the sun; and I am strongly inclined to the opinion that this is no other than the comet whose elements I have just communicated" (the comet found by Mr. Ross). There are difficulties, however, in the way of accepting this identification, judging from such information as we have to hand. The great increase of light near perihelion passage is not explained by the elements of the comet of January 7, which by theory would only have possessed five times the intensity of light that it had at the first Melbourne observation on the evening of January 12.

THE OBSERVATORY OF PALERMO.—In *Pubblicazioni del Real Osservatorio di Palermo, anni 1882-83*, Prof. Cacciatori, the director, has collected a large number of interesting observations made chiefly in the year 1882. Prof. Riccò's astro-physical observations of the planet Jupiter extend from December 1881 to June 1883, and his descriptions of the appearance of the disk are accompanied by eighteen well-executed tinted lithographs. An extensive series of observations of the great comet of 1882, also illustrated, follows; it was last perceived with difficulty on April 7, 1883. After the conjunction of the comet with the sun it was again sought for; with a power of 110 on the refractor, and in the best condition of atmosphere, the search was unsuccessful on three evenings in September. There are other cometary and planetary observations and an appendix with the meteorological results obtained at the auxiliary station of Valverde.

GEOGRAPHICAL NOTES

THE meetings of the International Polar Conference began in Vienna last week under the presidency of Herr Heinrich Wild, the Director of the Physical Central Observatory of St. Petersburg. In his address the President praised the great merits of Count Wilczek with regard to Polar research, referred to the lamented death, since the last conference, of the Secretary of the Polar Commission, Capt. Hoffmeyer of Copenhagen, and finally gave an outline of the work done since the St. Petersburg meeting by the various expeditions and observing stations. Herr R. Müller, Director of the Hydrographic Office at Pola, was elected secretary in the place of Capt. Hoffmeyer, deceased. The principal subject discussed at the first meeting was the determination of the minimum extent to which each expedition party is bound to work out and publish its own observations at its own expense, and the establishment of a universal form of publication of results for their easier comparison. First of all the meteorological observations were discussed in this regard. The debate turned on the uniform way of noting down the obligatory observations at each station, *i.e.* the observations of temperature, atmospheric pressure, humidity, wind, clouds, hydro-meteors, rainfall, and temperature of the ground, snow and ice. Among those who have arrived at Vienna are the following:—MM. R. Lenz (Professor at the St. Petersburg Technological Institute), H. Mohn (Director of the Christiania Meteorological Institute), R. H. Scott (Director of the London Meteorological Office), Lieut. P. H. Ray of Washington, Lieut. E. von Wohlgemuth (Vienna), Herr Wijkander, Prof. Guido Cora (Turin University), Capt. Dawson (Chief of the Fort Rae Expedition), Dr. Giese of Hamburg (Chief of the German Antarctic Expedition), H. Paulsen of Copenhagen (Chief of the Danish Polar Station at Godthaab), Lieut. Payen (Paris), Dr. Snellen (Director of the Utrecht Meteorological Observatory), Aksel S. Steen (of the Christiania Meteorological Institute), Count Hanns Wilczek (Vienna). The following were expected to arrive shortly:—Prof. G. Neumayer of Hamburg (Director of the German Seewarte), Prof. E. Mascart (Director of the Paris Meteorological Central Bureau), Dr. Börger (of the Kiel Marine Observatory), Prof. Lemström (Helsingfors), E. Riese (Chief of the Finnish Polar Station at Sodankyla).

THE *St. Petersburger Zeitung* contains the following details concerning the expedition which Col. Prjevalsky is now leading in Thibet. The points of departure of the expedition were Kiakhta and Ourga. From thence it was to go to Tsaidam by Alashan and Koko-Nor. In Tsaidam, at the foot of Burkhan Buda, it