

positions of which were required for the reduction of the observations made by the late Mr. James Ferguson during the years that he was so industriously and effectively observing with the equatorial. As a whole, therefore, the catalogue is a very miscellaneous one. The first edition contained 10,658 stars, with a number of cases, however, where the star had been observed only in one element, and included objects observed during the years 1845 to 1871. The new edition contains the results of observations to 1877, and includes 11,103 stars; the mean places are for the beginning of the year 1860, but it is to be borne in mind that they do not include any effect of proper motion from the mean date of observation, which is always given, to that general epoch. The annual precessions are annexed, without secular variation.

Like other publications of the U.S. National Observatory, the new Washington catalogue appears to have been most liberally circulated amongst astronomers.

**NEW COMETS.**—On August 21 a telescopic comet was discovered at Pola by Herr Palisa; its position at 10h. 26m. M.T. was in right ascension  $150^{\circ} 35'$  and declination  $+49^{\circ} 6'$ ; daily motion in right ascension  $1^{\circ} 34'$  increasing, and in declination 3 minutes diminishing; it was small but bright.

A second comet was discovered on August 24 at the Imperial Observatory, Strassburg, by Dr. Ernst Hartwig; it was then very faint and about  $1\frac{1}{2}$  minutes in diameter. The following elements and ephemeris have been calculated by Dr. Hartwig, from the Strassburg observations on August 24 and 28, and one at Leipsic on August 26:—

Perihelion passage August 26<sup>h</sup>46<sup>m</sup>1 M.T. at Berlin.

Longitude of perihelion ... ..	309 56.3	} M.Eq. 1879 <sup>o</sup> .
"    ascending node ... ..	28 12.7	
Inclination ... ..	71 55.0	
Logarithm of perihelion distance	9.99056	

Motion—retrograde.

It will be found that these elements have no resemblance to those of any comet at present in our catalogues.

The following positions are for Berlin midnight:—

	Right Ascension. h. m. s.	Declination North.	Log. distance from Earth.	Log. distance from Sun.
Sept. 5 ...	13 34 9	42 50.3	0.1055	9.9973
9 ...	13 46 19	37 37.8	0.1314	0.0036
13 ...	13 55 44	32 57.2	0.1577	0.0116
17 ...	14 3 20	28 46.5	0.1834	0.0212
21 ...	14 9 38	25 2.6	0.2081	0.0320
25 ...	14 15 3	21 42.2	0.2315	0.0439
29 ...	14 19 47	18 41.8	0.2535	0.0567

TO ASTRONOMERS

THE United States Naval Observatory will gratefully receive for its Library *separate copies or reprints* of memoirs published in the Transactions of learned societies or in journals. The volumes of Transactions are regularly received, but often many months after the reprints of particular papers, which are, therefore, especially valued.

It is also requested that all communications of this nature, and all correspondence relating to them, may be addressed to The Library, U.S. Naval Observatory, Washington, U.S.A.

Agents of the Smithsonian Institution abroad will receive large parcels for transmission. Smaller ones will be received more quickly if they are sent by post.

As far as possible the publications of the Observatory will be distributed to all working astronomers.

JOHN RODGERS,

Rear Admiral, U.S.N., Superintendent  
Naval Observatory, Washington, D.C., August 18

GEOGRAPHICAL NOTES

THE Permanent Commission of the International Geodetic Association, presided over by General Ibañez, has

decided to meet on the 16th inst. at Geneva, on the invitation which has been addressed to it by the Government of the little republic. The first official sitting is to be at 2 o'clock, on the 16th, at the Hotel de Ville of Geneva, in the room known as "the Alabama." In the evening Prof. E. Plantamour will hold a reception. The official sittings will continue daily at 10 A.M., in the same room, to the end of the week, interrupted on the 18th by a procession of steamers on the lake, which will occupy the whole of the day. On the evening of the 17th the Commissioners are invited to dine by the Council of the State of Geneva, and on the afternoon of the 19th there will be a reception at Sécheron by Prof. Plantamour. The programme of the session comprises: The reports of the Permanent Commission and the Central Bureau, the report of the Commission appointed at Hamburg in 1877 to consider the proposals of Lieut.-Col. Adan; the choice of the place of meeting of the sixth conference, and the appointment of special reporters to record the proceedings (1) As to determinations of latitude, longitude, and azimuth; (2) Triangulations and calculations of compensation of the networks; (3) Levelling operations and result of mareographic operations; (4) Measurements of the intensity of gravitation; (5) Publications relating to the measurement of degrees in Europe.

THE eminent African traveller, Dr. Junker, intends to start for Africa during this month. His first object is to reach Monbutta, which is to form the basis for his further investigations.

THE *Daily News* Lisbon correspondent telegraphs on September 2, that official news has arrived which states that on July 24 the explorers Ivens and Capello were in the district called Duque de Braganza. At the last session of the Geographical Society it was stated that the explorers were unable to continue their journey through want of means. The president promised to ask the Government to send them assistance. It will be remembered that Ivens and Capello started with Major Pinto.

WE find in the *Isvestia* of the Russian Geographical Society an interesting note by M. Potanin on the eastern Altai Mountains. Until 1869 these highlands were quite unknown, and even after the recent explorations of MM. Matusovsky and Sosnovsky it was considered that the Altai range did not go east of the meridian of Kobdo, where geographers, according to the map of Klapproth, supposed the existence of low hills which connected the Altai with the Tian Shan. Now M. Potanin proves that the Altai range goes further east, at least to the meridian of Lake Orok-nor, and that it is separated on its whole length by the Gobi steppe from the Tian Shan mountains. The altitude of the mountain passes in the parts visited by M. Potanin reaches as much as 8,000 feet. The eastern parts of the Altai mountains are rather dry, and forests in this part of the range are rather scarce.

THE same number of the *Isvestia* of the Russian Geographical Society contains an interesting note on the levelling accomplished during the last three years by the Russian General Staff on several lines of railways in Western Russia. The results are very satisfactory, as the probable error of this topographical levelling (with level and rule) does not exceed  $\pm 2$  inches on a distance of 100 versts (67 miles), *i.e.*, less than half the probable error of the best geodetical levellings. These levellings have brought to light a very interesting circumstance, namely, that the average level of the sea at Cronstadt is  $13.2 \pm 3.3$  inches higher than at Dünamünde; the distance between the two towns being 240 miles. The Prussian levellings prove that the level of the Baltic is 20 inches higher at Kiel than at Memel.

CAPT. HOWGATE writes to us that he is preparing to send an expedition to the North Pole next year, independently of