

IN the number dated April 19, *Science* publishes an excellent ethnographic map, by Mr. A. S. Gatschet, representing the linguistic families of the Indian dialects in the south-eastern parts of the United States, so far as they can be traced by the study of actual remnants of tribes still lingering in or near their old haunts, and by historic research. Of all the families represented on the map, the Maskóki were at one time most important. It is said that in former times the tribes of this family extended from the Atlantic to the country beyond the Mississippi, and from the Appalachian Range to the Gulf of Mexico. The majority of the Maskóki tribes now live in the eastern parts of the Indian Territory.

PROF. G. POUCHET has recently published a long and interesting paper concerning the life and work of Ch. Robin, the late Professor of Histology in the Paris Medical School. A complete list of Robin's works adds greatly to the value of the paper.

THE fourth number of the *Annales de l'Institut Pasteur* contains many interesting papers, among which are one by Duclaux, on the general biological phenomena of micro-organisms, and one by Bardach, Perroncito, and Carita, on the presence of the Bacillus of rabies in milk.

AN explosion of natural gas, which had leaked from pipes and mixed with the atmosphere, took place lately at Youngstown, Ohio. The result was a fire, which burned down a church and a large number of new buildings. The cause of ignition was the lantern of a watchman, who narrowly escaped death. The use of natural gas as an illuminant and fuel is attended by considerable danger, because, being inodorous, it may leak without anyone noticing the fact until a disaster occurs.

IN a pamphlet issued lately by the U.S. Hydrographic Office, Lieut. Underwood says that mineral oils are not so effective for use at sea as vegetable or animal. A comparatively small amount of the right kind of oil, say two quarts per hour, properly used, is sufficient, he asserts, to prevent much damage, both to vessels and to small boats, in heavy seas. The greatest result from oil is obtained in deep water. In a surf, or where water is breaking on a bar, the effect is not so certain; but, even in this case, oil may be of benefit, and its use is recommended by Lieut. Underwood. He advises that, when an attempt is about to be made to board a wreck, the approaching vessel should use the oil after running as close as possible under the lee of the wreck. The wreck will soon drift into the oil, and then a boat may be sent alongside of her.

ACCORDING to an official notification of the Trustees of the Schwestern Fröhlich Stiftung, at Vienna, certain donations and pensions will be granted from the funds of this charity this year, in accordance with the will of the testatrix, Miss Anna Fröhlich, to deserving persons of talent who have distinguished themselves in any of the branches of science, art, or literature, and who may be in want of pecuniary support either through accident, illness, or infirmity consequent upon old age. The grant of such aid is primarily intended for Austrian subjects; but foreigners of every nationality, if resident in Austria, may benefit by the Trust. Austrian subjects residing in England may also make application for a grant. Applications addressed to the Trustees (das Curatorium) must be transmitted to the President's office of the Common Council of the City of Vienna (an das Präsidial-Bureau des Wiener Gemeinderathes Neues Rathaus) before August 31, 1887, through the Austro-Hungarian Embassy in London, 18 Belgrave Square, S.W., where particulars as to terms and conditions may be obtained.

THE Gold and Silver Commissioners have requested Mr. Henry Dunning Macleod to investigate the relation between money and prices.

IN Mr. Abercromby's article last week on equatorial wind currents and Krakatão dust, the end of the last paragraph but two (p. 87) should read thus—"and though the highest currents over the Polar limit of both the south-east and north-east trades are from north-west and south-west [not south-east] respectively," &c.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus* ♂) from India, presented by Mrs. C. J. Fisher; a Bonnet Monkey (*Macacus sinicus* ♂) from India, presented by Mrs. Yeates; a Lesser White-nosed Monkey (*Cercopithecus pelaurista*) from West Africa, presented by Mr. T. H. Kenyon, R.N.; a Brown Bear (*Ursus arctos*) from Northern Europe, presented by Mr. John Rhind; a Common Squirrel (*Sciurus vulgaris*), British, presented by Miss Muriel Reed; a Blyth's Tragopan (*Cerionis blythi*) from Upper Assam, presented by Mr. W. Brydon; a King Vulture (*Gypagus papa*) from Tropical America, presented by Mr. W. Allen Sumner; two Little Guans (*Ortalis motmot*) from Guiana, presented by Mr. W. Thomson; six European Tree Frogs (*Hyla arborea*), European, presented by Mr. E. Wroughton; a Larger Hill Mynah (*Gracula intermedia*) from Northern India, four Tuatera Lizards (*Sphenodon punctatus*) from New Zealand, deposited; a Patagonian Conure (*Conurus patagonus*) from La Plata, two Dark-green Snakes (*Zamenis atrovirens*) from Dalmatia, four Axolotls (*Siredon mexicanus*) from Mexico, purchased; a Common Rhea (*Rhea americana*) from South America, received in exchange; a Molucca Deer (*Cervus moluccensis*); a Japanese Deer (*Cervus sika*) born in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE PARIS OBSERVATORY.—We have received Admiral Mouchez's Report for the year 1886, which was presented to the Council of the Observatory on February 4, 1887. Admiral Mouchez first refers to M. Lœwy's proposed new methods for determination of the constant of refraction and of the constant of aberration, the principles of which have already been explained in this column. With regard to refraction, it is pointed out that the exact determination of its amount at different altitudes and under varying conditions is of peculiar interest for an Observatory situated as that of Paris is, on the southern borders of a large city, so that the temperature of the strata of air to the north and to the south will probably differ considerably. M. Mouchez hopes that during the current year it will be possible to attack these fundamental problems with an instrument constructed on M. Lœwy's plan. The great meridian instrument and the Gambey circle have been actively employed during the year, a grand total of 16,505 observations having been obtained, 798 of which refer to planets, including 148 of the sun and 128 of the moon. The principal meridian work continues, as in recent years, to be the re-observation of Lalande's stars. The equatorials have been employed in the observations of comets, minor planets, nebulae, eclipses of Jupiter's satellites, and occultations. It is almost unnecessary to remind our readers of the magnificent work in astronomical photography which has been carried on by the MM. Henry, and which embraces planets and their satellites (Hyperion has been photographed with an exposure of thirty-five minutes), the moon and stars, including clusters and double-stars. M. Mouchez reports that he is considering how the stellar photographs may be most conveniently utilized for the formation of a catalogue, and states that, before final decision, he awaits the results of the then approaching meeting of the Astronomical Congress. The macro-micrometer devised by MM. Henry for measuring the relative positions of stars on the photographic plates is described in detail, and some results of double-star measurements made with this instrument are appended. It appears that these are of considerable accuracy, the mean error of a single measure for the double-star ζ Ursæ Majoris being 0".077 in distance and 0".55 in position-angle.

ASTRONOMICAL PHOTOGRAPHY.—The *New Princeton Review* for May 1887 contains an interesting article, by Prof. C. A. Young, with the above title. The article is, of course, of quite a popular character, but none the less is it deserving of perusal by astronomers—professional as well as amateur. In a rapid survey of the history of astronomical photography, Prof. Young refers briefly to the labours of J. W. Draper, Bond, Rutherford, Gould, Henry Draper, and Pickering, in America; of De la Rue, Common, and Roberts, in England; of the Brothers Henry, in France; of Vogel, in Germany; and of Gill, in South Africa. He then goes on to discuss the relative advantages and disadvantages attending the employment of the reflector and of the refractor respectively in this particular department of astronomical science; pointing out, in the case of the refractor, the two directions in which, at the present time, efforts are being made to overcome the difficulties arising from the want of perfect achromatism of the object-glass, viz. Prof. Abbe's researches on the production of glass which shall be perfectly achromatic, and Herr Vogel's investigations on a new sensitizing medium which may be as sensitive to the yellow and green rays as the salts of silver are to the violet rays. In the remaining portion of the article Prof. Young distinguishes two classes of astronomical photographs: those in which the end is to produce a picture of the object; and those which are made for purposes of measurement, and the determination of precise numerical data. He gives various examples of each class, with a brief account of the progress which has been made in solar, lunar, planetary, stellar, and nebular photography, as thus classified, concluding with an account of the very remarkable results which have recently been obtained by Prof. Pickering in the photography of stellar spectra.

COMET 1887 e (BARNARD, MAY 12).—Dr. H. Oppenheim (*Astron. Nachr.* No. 278) has computed the following elements and ephemeris of this comet from an observation made at Cambridge, U.S., on May 12, and from two others made at Rome on the 15th and 17th:—

T = 1887 June 24^h 55^m 59^s Berlin M. T.

$$\begin{aligned} \pi - \varnothing &= 24 \quad 21 \quad 30 \\ \varnothing &= 244 \quad 54 \quad 52 \\ \iota &= 17 \quad 9 \quad 21 \end{aligned} \left. \vphantom{\begin{aligned} \pi - \varnothing \\ \varnothing \\ \iota \end{aligned}} \right\} \text{Mean Eq. 1887}^{\circ} 0. \\ \log q &= 0.11510$$

Ephemeris for Berlin Midnight.

1887.	R.A.	Decl.	Log Δ .	Log r .	Bright-ness.
	h. m. s.	° ' " S.			
June 1	15 49 55	16 12' 3" S.	9.5323	0.1299	2.0
5	16 0 2	12 19' 1" S.	9.5185	0.1253	2.2
9	16 10 46	8 17' 1" S.	9.5097	0.1216	2.3
13	16 22 1	4 13' 9" S.	9.5062	0.1186	2.4

The brightness on May 12 is taken as unity.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 JUNE 5-11.

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on June 5.

Sun rises, 3h. 48m.; souths, 11h. 58m. 10' 2s.; sets, 20h. 8m.; decl. on meridian, 22° 33' N.; Sidereal Time at Sunset, 13h. 4m.

Moon (Full on June 5) rises, 19h. 31m.; souths, 0h. 4m.*; sets, 4h. 32m.*; decl. on meridian, 18° 7' S.

Planet.	Rises.	Souths.	Sets.	Decl. on meridian.
	h. m.	h. m.	h. m.	° ' "
Mercury	4 15	12 44	21 13	25 6 N.
Venus	6 47	15 1	23 15	23 8 N.
Mars	3 14	11 15	19 16	21 13 N.
Jupiter	15 26	20 44	2 2*	8 56 S.
Saturn	6 29	14 35	22 41	21 56 N.

* Indicates that the southing and setting are those of the following morning.

Variable Stars.

Star.	R.A.	Decl.	h. m.
	h. m.	° ' "	h. m.
U Cephei	0 52' 3"	81° 16' N.	June 8, 1 16 m
δ Libræ	14 54' 9"	8 4 S.	" 11, 1 52 m
U Coronæ	15 13' 6"	32 4 N.	" 7, 23 48 m
W Scorpii	16 5' 2"	19 51 S.	" 7, m
U Ophiuchi	17 10' 8"	1 20 N.	" 10, 0 14 m

M signifies maximum; m minimum.

Occultations of Stars by the Moon (visible at Greenwich).

June.	Star.	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image.
			h. m.	h. m.	° ' "
5	29 Ophiuchi	6	20 52	21 59	60 224
6	B.A.C. 6081	6	20 40	21 39	20 258
10	45 Capricorni	6	23 49	0 53†	42 275
10	44 Capricorni	6	23 58	near approach	156 —

† Occurs on the following morning.

Saturn, June 5.—Outer major axis of outer ring = 38" 1; outer minor axis of outer ring = 15" 2; southern surface visible.

Meteor-Showers.

	R.A.	Decl.
Near Antares	249	20 S.
β Ophiuchi	261	5 N. Rather slow.

GEOGRAPHICAL NOTES.

THE Expedition which went out to explore the New Siberian Islands, has returned to St. Petersburg with interesting results. The Expedition was organized by the Academy of Science, St. Petersburg, 26,000 roubles being contributed by the Emperor Alexander. Operations commenced in 1885, and considerable preparations had to be made. A winter retreat was chosen in the district of Kasachje (under 71° N. lat.), 30 kilometres south of Ustjansk at the mouth of the Jana. About 270 kilometres distant from Kasachje, were discovered the remains of a mammoth. At the end of March 1886, Dr. Bunge left for the Swatoinoss Mountains, where the real march with 240 dogs was to begin; 19 sledges drawn by 12 dogs, led the expedition over the frozen sea. In the latter half of April, the Jakutes returned with the sledges, and reported that the journey had been successfully accomplished. Dr. Bunge devoted his attention in particular to the Liachow Island, while Baron Toll attempted not only Kotelni Island, but also the Island of New Siberia. In May both explorers were at the Medweshi foothills, to the south of Kotelni Island. Liachow Island has a very uniform but rough appearance; it is 300 kilometres in circumference, the surface being uneven and hilly. The prevailing winds are east and west. The latter is extraordinarily violent, and works great mischief; it brings first rain, and then frost. Winter retires about the beginning of June, although the summer is never quite free from snow, mist, storms, &c. Enormous masses of perpetual ice inclose the island; only once could Dr. Bunge make a sea passage free from ice. In clear weather, looking northwards from Kotelni Island land is visible, which appears to be only 150 kilometres distant. The possibility of reaching this land is increased by the fact that a warm current flowing in a fixed direction prevents the sea from freezing over. The highest observed temperature in Liachow Island was only 8° (Réaumur). The snow melted in the beginning of June, and about the middle of the same month the first flower was found. Wild reindeer, wolves, Arctic foxes, and mice are found on these islands, as also sea-gulls, snipe, and other birds. With the exception of the mouse, all animals on the island are merely guests; they all winter on the land.

THE Canadian Government sent out at the beginning of May an Expedition for the exploration of the region watered by the great river Yukon in the north-west of the Dominion. The geology and natural history of the Expedition will be under the care of Dr. Dawson of the Canadian Survey; while a careful topographical survey will be made by Mr. W. Ogilvy.

In the new number (128) of the *Zeitschrift* of the Berlin Geographical Society, Prof. Blumentritt has some critical remarks on the Spanish data with reference to the distribution of the native languages in the Philippines. Colonel Schelling contributes a useful abstract of the Russian Survey work up to 1885, and Dr. Emil Deckert a paper on the country and people of the Southern United States.

THE German Government has appointed Lieut. Kund, who has done such good work in the Congo region, chief of the scientific station which has been established at the Cameroons; for when the Germans undertake the development of any region they at once recognize the necessity for scientific observations in order to accomplish their object. A surgeon and botanist will