

work ; in reality it is far more conducive to fertility than that of Germany," Dr. Liebscher maintains that in his book the very contrary of what Mr. Kotô implies will be found, indicating especially the conclusion of what he says on the natural foundation of agriculture in Japan (p. 58). There it is stated that, "owing to the climate rather than to the rich soil, an amazingly large number of people can live in Japan on the produce of one field." Similar misunderstanding, Dr. Liebscher writes, has been shown by Mr. Kotô in his remarks on the geology and the soil of Japan, in his opinion concerning the Japanese land-tax system, in what he says on the religion of his countrymen, and in denying the existence of polygamy among them.

A SHARP shock of earthquake was felt at 8 o'clock on September 2 at Frascati, on the Alban Hills, twelve miles from Rome. The movement was undulatory and lasted several seconds, but without causing any damage. The instruments in the observatory of the Roman College noted at the same hour a sensible undulatory movement, in the direction of from north-east to south-west. The earthquake was felt simultaneously at Albano, Ariccia, Genzano, Rocca di Papa, Monte Porzio, and other towns on the Alban Hills. At Rocca di Papa a slight shock also occurred a few days ago. New York papers report an earthquake at Pachuca, in Mexico, by which twenty persons lost their lives. A shock was felt at Fjøsanger in Bergens Stift, Norway, on August 17, at 10 p.m.

A CORRESPONDENT points out that an account of Prof. Edlund's theory of the connection between thunderstorms and auroræ will be found in *Petermann's Mittheilungen* for 1879, p. 76.

It is stated that an important oyster bed has been discovered in the Medway. It is estimated to contain over a quarter of a million of young oysters. The Medway was formerly a famous oyster fishery, and it is hoped from this discovery that it is about to become so again.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus erythraeus* ♀) from India, presented by Miss Garwood ; a Golden Eagle (*Aquila chrysaetos*) from Scotland, presented by Mr. Bertram B. Hagen ; two Long-eared Owls (*Asio otus*), British, presented by Mr. Percy F. Fordham ; a Mocking Bird (*Mimus polyglottus*) from North America, presented by Mr. A. Townsend ; two Marsh Harriers (*Circus aruginosus*), European, presented by Lieut.-Col. E. Delme Radcliffe ; two Barbary Apes (*Macacus inuus*) from North Africa, deposited ; a Silvery Gibbon (*Hylobates leuciscus* ♂) from Java, an Indian Muntjac (*Cervulus muntjac*) from India, four Passerine Doves (*Chamaepelia passerina*) from America, a Malabar Parrakeet (*Palæornis columboides*) from Southern India, a Boatbill (*Cancroma cochlearia*), an Anaconda (*Eunectes murinus*) from South America, a Sharp-nosed Crocodile (*Crocodilus cataphractus*) from Central America, purchased ; two Ostriches (*Struthio camelus* ♂ ♀) from Africa, received on approval.

OUR ASTRONOMICAL COLUMN

TEMPEL'S COMET, 1873 II.—M. Schulhof of Paris has published elements and an ephemeris of this comet for the approaching return to perihelion. The following is the predicted orbit :—

Epoch, 1883 October 20^o M.T. at Berlin

| | | | | | |
|--------------------------------|-----|----------|------|------|---------------------------------|
| Mean anomaly... | ... | 354 | 5 | 43.5 | } M. Eq. 1880 ^o . |
| Longitude of perihelion ... | ... | 306 | 7 | 4.4 | |
| " a-cending node... | ... | 121 | 2 | 8.5 | |
| Inclination ... | ... | 12 | 45 | 17.1 | |
| Angle of eccentricity ... | ... | 33 | 32 | 29.5 | |
| Mean daily sidereal motion ... | ... | 681" | 1068 | | |
| Log. semi-axis major ... | ... | 0.477861 | | | |

From these elements we find the time of perihelion passage November 20^o17155 G.M.T., and the period of revolution 1902.77 days. M. Schulhof's ephemeris so far published extends from August 28 to November 8 ; during which period the comet is slowly receding from the earth. We extract a few positions :—

At Berlin Midnight

| | R.A. | | | N.P.D. | | | Log. distance from | |
|--------------|------|----|----|--------|----|---|--------------------|--------|
| | h. | m. | s. | | | | Earth. | Sun. |
| Sept. 21 ... | 15 | 19 | 50 | 101 | 51 | 0 | 0.2732 | 0.1739 |
| 23 ... | 15 | 25 | 3 | 102 | 24 | 8 | | |
| 25 ... | 15 | 30 | 22 | 102 | 58 | 3 | 0.2739 | 0.1687 |
| 27 ... | 15 | 35 | 47 | 103 | 31 | 8 | | |
| 29 ... | 15 | 41 | 17 | 104 | 4 | 6 | 0.2744 | 0.1637 |
| Oct. 1 ... | 15 | 46 | 53 | 104 | 37 | 2 | | |
| 3 ... | 15 | 52 | 35 | 105 | 9 | 4 | 0.2750 | 0.1589 |
| 5 ... | 15 | 58 | 22 | 105 | 41 | 2 | | |

Unless the comet is observed at the present return, observations will hardly be possible before the spring of 1894.

THE GREAT COMET OF 1882.—Dr. B. A. Gould, director of the Observatory at Cordova, informs us that this comet was last seen there with the naked eye on March 7, when Mr. Thome found it already very faint in the telescope, and no nuclear condensation perceptible. His last observation was on June 1, but it was not possible to use the filar micrometer, and he had to depend upon the circles of the equatorial. Had it not been less than an hour high at nightfall, he thinks he could have observed it for a month longer. The Cordova refractor is of ten inches aperture. On March 7 the distance of the comet from the earth was 3^o07.

THE MINOR PLANET, NO. 234.—Prof. Krueger communicates in a circular two observations of the small planet last discovered, telegraphed by Mr. O. C. Wendell, from which it appears that the daily motion in N.P.D. is as much as 21', or, reducing the places for August 12 and 24 to longitude and latitude, we find a change of latitude of 3° 13' in the interval, the descending node being passed on August 23. This seems to point to a considerable inclination of the orbit. The Harvard positions are as follow :—

| G.M.T. | R.A. | N.P.D. |
|--|-----------|-----------|
| 1883, August 21 ^h 747 ^m 0 ^s ... | 318 57 43 | 105 24 9 |
| 24 ^h 727 ^m 4 ^s ... | 318 36 0 | 106 20 34 |

Of the large number of these bodies now known, *Pallas*, the second in order of discovery, still retains the greatest orbital inclination, 34° 44' at present.

GEOGRAPHICAL NOTES

IN the interests of anthropology, Dr. A. B. Meyer, curator of the Dresden Ethnological Museum, has just issued some practical suggestions addressed to the officers of the German Imperial Navy visiting the Indo-Pacific waters. The chief object of this "Denkschrift" is the completion of the Dresden ethnographic collection, whose desiderata are mentioned in detail, and special instructions are given as regards the Chinese seaboard, the South Sea Islands, the north-west coast of America, Madagascar, the Eastern Archipelago, and in general such places as lie on the ordinary route of the German Navy. Here is still to be gathered a rich harvest of materials illustrating the usages, traditions, religions, and social culture, especially of the Polynesian, Papuan, Indo-Chinese, Malay, and North American races. Many objects may thus be brought together calculated to throw light on such important historic and religious movements as the spread of Buddhism from India throughout East Asia, and the influence of Hinduism in past times on the local cultures in Further India and Malaysia. Amongst the miscellaneous wants particular mention is made of fishing gear, boat models, and musical instruments from Formosa ; blowpipes, krisses, shields, and brass armour from the Sulu Archipelago and Palawan ; nets, harpoons, magic wands from Corea and Yesso ; wood carvings and idols from New Guinea and New Britain ; clubs, spears, stone hatchets, tattoo designs, figures of men and animals in wood or stone from Melanesia ; objects of fetish worship from Micronesia ; jade ornaments from Polynesia ; carved wooden masks of men and animals, clay or stone vessels, tobacco pipes and nephrite objects from the north-west coast of America ; talismans, idols, house utensils, and weapons from Madagascar ; wicker-work, burnt clay figures of evil spirits, woven materials