published a bulky volume of English phrases, is now preparing a series of schoolbooks for use in Chinese government schools. An English reading-book for beginners, an elementary geography, a series of conversation books, and a manual of English correspondence have either been already published, or will shortly appear. Among many other indications of the steady, though slow, advance of the Chinese in this direction, the Peking correspondent of the *North China Herald* refers with regret to the retirement from business of Mr. Yang, a well-known pawnbroker of the metropolis. In addition to the ordinary duties of his calling this individual appears to have studied chemistry, mechanical science, French, mineralogy, medicine, and other subjects of a similar kind. He owned gasworks, steam-engines, a complete pharmacopeia of drugs, photographic apparatus, and a geological cabinet. It is to be hoped that Mr. Yang has prospered in his business, because he has retired to his native province, Shansi, where he intends prosecuting enterprises for coal and iron mining, and other appliances of foreign machinery. When tastes of this kind extend to the shrewd and enterprising Chinese traders, we need not despair of the outlook for science in China.

SOME time since we alluded to the work done in China by an American female physician, Miss Dr. Howard. She has attended the mother of Li Hung Chang, the great Viceroy, and now we read she is treating the wife of the same high official. The fame of the lady doctor appears to have spread far and wide over North China, and she is now flooded with applications for assistance and advice from the women of wealthy families, who would die rather than be treated by a foreign male physician. It looks as if the various countries of the East offered an almost inexhaustible field for women possessing medical knowledge and skill.

THE Annual Report of the Glasgow Museum is as favourable as can be expected, considering the totally inadequate space allotted for the purpose in one of the wealthiest cities of the world.

PROF. H. CARRINGTON BOLTON has issued in a separate form his address on Chemical Literature, delivered before the American Association at Montreal last year.

FOR Baron Nordenskjöld's coming expedition to Greenland a flying-machine is now being constructed in Gothenburg. The apparatus, a kind of flying or air-sailing machine, is the invention of a Swedish engineer, Herr A. Montén, who is now constructing the same at the expense of Dr. Oscar Dickson.

ON the night of April 3, frequent and violent shocks of earthquake were felt at Pedara in Sicily.

THE additions to the Zoological Society's Gardens during the past week include a Leonine Monkey (*Macacus leoninus* ♂) from Arracan, presented by Mr. A. G. Henry; a Mule Deer (*Cervus macrotis* ♀) from North America, presented by Judge Caton, C.M.Z.S.; a Common Squirrel (*Sciurus vulgaris* ♀), British, presented by Miss A. M. Frost; a Common Pintail (*Dafila acuta* ♂), British, presented by Mr. Frank Seago; a Grey-lag Goose (*Anser ferus*), British, presented by Mr. Vincent W. Corbett; four Palmated Newts (*Triton palmipes*), British, presented by Mr. J. E. Kelsall; a Radiated Tortoise (*Testudo radiata*) from Madagascar, deposited; a Black Saki (*Pithecia satanas* ♀), a White-bellied Parrot (*Caica leucogastra*) from the Amazons, a Talapoin Monkey (*Cercopithecus talapoin* ♂), four Harlequin Quails (*Coturnix histrionica* ♂ ♂ ♀ ♀) from West Africa, a Brazilian Blue Grosbeak (*Guiraca cærulea*), four Saffron Finches (*Sycalis flaveola* ♂ ♂ ♂ ♀) from Brazil, purchased.

OUR ASTRONOMICAL COLUMN

D'ARREST'S COMET.—On April 4 a.m. this comet was re-observed by Dr. Hartwig with the 20-inch refractor of the Observatory of Strasburg, near the position indicated by the elements of M. Leveau of Paris. The observation is a notable one, having been made at the great interval of 285 days from the date of perihelion passage; no other comet of short period has been hitherto observed under such circumstances, indeed there is only one instance upon record where a comet has been observed further from perihelion passage, and this was in the case of the celebrated comet of 1811, which was in perihelion on Sept. 12 in that year, and was followed by Wisniewsky till Aug. 17, 1812, or 309 days after its nearest approach to the sun. The great comet of 1861 was observed at Pulkowa 284 days after perihelion.

The comet in question was discovered by the late Prof. D'Arrest at Leipsic on June 27, 1851, and was observed at Berlin till October 6; its periodicity was pointed out by the same astronomer in the first week in August. MM. Oudemanns and Schulze specially occupied themselves with the investigation of its orbit in this year. At the next return in 1857 its position did not allow of observations in this hemisphere, but it was observed at the Royal Observatory, Cape of Good Hope, on December 5, and followed until January 18, 1858. The ensuing perihelion passage took place at the end of February, 1864, but from the unfavourable track of the comet in the heavens no observations were procured. During this revolution the comet had approached the planet Jupiter within about 0·36 of the earth's mean distance from the sun, and large perturbations of the elements were thereby produced; the nearest approach occurred in April, 1861. At the returns in 1870 and 1877 observations sufficient for the correction of the elements were obtained; the later investigation of the comet's motion has been ably conducted by M. Leveau.

In 1851 at perihelion the comet was distant from the earth's orbit only 0·162; at the present time this distance has been increased by perturbation to 0·316. There is a very close approach to the orbit of Jupiter, in heliocentric longitude 154°, or at an angular distance of about 165° before perihelion. In the orbit of 1870 the distance was 0·0845, in that of 1884 it is 0·1232; the presumption will therefore be that the attraction of this planet has fixed the comet in the system.

The following positions are calculated from M. Leveau's predicted elements; the perihelion passage occurs 1884, January 13 5765 G.M.T. :—

At Greenwich Midnight

	R.A. h. m. s.	Decl. ° ′	Log. distance from Earth.	Log. distance from Sun.
April 23,	13 38 14 ...	+11 13·7 ...	0·2951 ...	0·4649
25, ,,	36 25 ...	11 27·6		
27, ,,	34 37 ...	11 40·8 ...	0·2927 ...	0·4609
29, ,,	32 50 ...	11 53·2		
May 1, ,,	31 3 ...	12 4·7 ...	0·2912 ...	0·4569
3, ,,	29 18 ...	12 15·3		
5, ,,	27 35 ...	12 25·1 ...	0·2906 ...	0·4528
7, ,,	25 55 ...	12 33·9		
9, ,,	24 18 ...	+12 41·7 ...	0·2908 ...	0·4486

THE SOLAR ECLIPSE IN MAY.—On May 7, on the eastern coast of Australia, the sun will rise in a sea-horizon about the time of greatest eclipse. With favourable weather the observation will be a very interesting and unusual one, more particularly about Sydney, where the magnitude of the eclipse is greatest. It will be seen from the maps in our ephemerides that totality does not reach Australia, but at Sydney the sun will rise at 6h. 38m., within a quarter of an hour after the middle of the phenomenon, when the magnitude will be 0·95. In Queensland the magnitude diminishes to 0·75, and the sun will be in the horizon at greatest phase. At the former place, therefore, a narrow crescent emerging from the sea-horizon will constitute apparent sunrise.

PHYSICS IN RUSSIA DURING THE LAST TEN YEARS[1]

THE Russian Physical Society was founded only ten years ago, and since its foundation it has become the centre of all researches in physics carried on in Russia, which were limited before to a few dissertations written by Russian Professors of Physics in German Universities, and to a few memoirs communicated to the Academy of Sciences. At present the

[1] Historical sketch of the work done by the Physical Society at the University of St. Petersburg during the last ten years by N. Hesehus in the *Journal of the Russian Chemical and Physical Society*, vol. xiv. fasc. ix.