

forms of the present population. Dr. Studer suggests that the Rhaetian short-headed type may be referred to the old dwellers of the Stone period, in which case the prevalent dark hair, eyes, and skin of the present natives of Graubünden may recall the aspect of the older prehistoric race. There is also a large dark population about the lakes in Canton Berne.

M. VERNET has recently made a number of physiological observations on himself during eighteen ascents of high Alpine summits (between 1680 and 4638 metres in height). He finds that the strong muscular efforts made both in mounting and descending caused a rise of temperature of about 1.64° to 1.70° C. on an average; a rise in the pulse from about 75 to 83 in a minute, and an increase in the respiratory acts from about 21 to 25 in a minute. A few hours' rest after the effort ceased brought back the temperature to its normal value. Other muscular efforts, such as riding, wood-sawing or chopping, &c., had quite the same effect. The author's observations are detailed in the *Archives des Sciences*.

THE School of Anthropology, created a few years ago under the auspices of the city of Paris, has opened its 1885-86 session. The course of lectures delivered by M. de Mortillet on prehistoric anthropology will be illustrated for the first time by a series of projections. English anthropologists will learn with pleasure that M. Gabriel de Mortillet, who was one of the companions of Agassiz, has been elected representative of the Seine et Oise Department.

THE engineers of the French Service are establishing a telephonic communication between Paris and Rheims, 160 kilometres from Paris. The Paris terminus of this line will be the Exchange. A sum of one franc for each five minutes will be charged for conversation. As soon as this line is finished the work will begin of connecting Rouen with Paris (126 kilometres). Rouen has been already connected with Havre, 78 kilometres distant, by a telephonic line. Conversation between these two cities is very easily held. It is the success of this system which led to further extension on larger distances.

ON October 9, between 9 and 10 a.m., two severe shocks of earthquake were felt on the Lis Island, in the parish of Sorunda, in Sweden. In the school-house, while teaching was going on, two severe shocks were felt like two blows from an enormous hammer in the north-western corner of the building. In this corner the windows rattled, the floor swayed, and rumbling like that of distant thunder was heard. Simultaneously a great thunderstorm passed over the district, accompanied by heavy rain. It has, however, been ascertained beyond doubt that the shocks were not due to the former, as the shocks were felt by many persons out of doors. The earthquake went from west to east.

SINCE 1880, when diggings for amber were commenced under the Smaland Peninsula in East Prussia, the yield of the veins here has greatly increased. In 1864 the revenue was 1700*l.* against 25,000*l.* in 1883.

MR. WILLIAM CAMERON, F.G.S., the Singapore papers state, has been appointed *Honorary Explorer* and *Geologist* to the Straits Settlements. "*Honorary Explorer*" is a curious office, and we cannot recollect ever having heard of one before; but as Mr. Cameron, it is to be presumed, has accepted these two honorary offices, they must be of some assistance to him in his explorations in the Malay Peninsula. One so rarely hears of an *Honorary Colonial governor*, secretary, treasurer, or other official, that an "*Honorary Colonial Explorer*" is something of a *rara avis*, and as such deserves to be specially chronicled.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus*),

a Bonnet Monkey (*Macacus sinicus*) ♀ from India, presented by Mr. C. E. McCheane; a Macaque Monkey (*Macacus cynomolgus* ♂) from India, presented by Mr. C. Canfor; a Mexican Deer (*Cariacus mexicanus* ♂) from Florida, presented by Mr. G. B. H. Marton; two Spotted-tailed Dasyures (*Dasyurus maculatus* ♂ ♀), three Short-headed Phalangers (*Belideus breviceps* ♂ ♂ ♀) from South Australia, presented by Sir W. C. F. Robinson, K.C.M.G.; an Osprey (*Pandion halietus*), captured at sea, presented by Capt. Morgan; an Alexandrine Parrakeet (*Palæornis alexandri*) from India, presented by Mr. Chas. Williams; a Black-eyebrowed Albatross (*Diomedea melanophrys*) from False Bay, South Africa, a Vulturine Eagle (*Aquila verreauxi*) from South Africa, a Sharp-headed Lizard (*Lacerta oxycephala*) from Madeira, presented by Mr. W. Aysford Sandford, F.Z.S.; a Black-crested Eagle (*Lophoetus occipitalis*) from South Africa, presented by the Lady Robinson; a Rufescent Snake (*Leptodira rufescens*), a Hoary Snake (*Coronella canis*), a Keeled Euprepes (*Euprepes carinatus*), five Rough-scaled Zonures (*Zonurus corydus*) from South Africa, presented by the Rev. G. H. R. Fisk, C.M.Z.S.; three Grey-breasted Parrakeets (*Bolborhynchus monachus*) from South America, a Pale-headed Broadtail (*Platycercus pallidiceps*) from North-East Australia, deposited; two Lesser Vasa Parrakeets (*Coracopsis nigra*) from Madagascar, purchased.

ASTRONOMICAL PHENOMENA FOR THE WEEK, 1885, NOVEMBER 8-14

(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 November 8

Sun rises, 7h. 8m.; souths, 11h. 43m. 54's.; sets, 16h. 20m.; decl. on meridian, $16^{\circ} 43' S.$; Sidereal Time at Sunset, 19h. 32m.

Moon (two days after New) rises, 8h. 28m.; souths, 13h. 9m.; sets, 17h. 46m.; decl. on meridian, $16^{\circ} 33' S.$

Planet	Rises		Souths		Sets		Decl. on meridian
	h.	m.	h.	m.	h.	m.	
Mercury ...	8	34	12	38	16	42	$21^{\circ} 42' S.$
Venus ...	11	22	14	54	18	26	$26 12 S.$
Mars ...	23	48*	7	0	14	12	$13 11 N.$
Jupiter ...	2	34	8	46	14	58	$1 33 N.$
Saturn ...	19	17*	3	25	11	33	$22 18 N.$

* Indicates that the rising is that of the preceding day.

Phenomena of Jupiter's Satellites

Nov.	h.	m.	Nov.	h.	m.	
8	4	54	II. ecl. disap.	13	4 59	I. tr. ing.
9	5	40	III. occ. reap.	13	7 16	I. tr. egr.
10	4	42	II. tr. egr.	14	4 37	I. occ. reap.
12	6	54	I. ecl. disap.			

The Phenomena of Jupiter's Satellites are such as are visible at Greenwich.

Nov.	h.	Nov.	h.
10	20	Venus in conjunction with and $7^{\circ} 49'$ south of the Moon.	

OPTICAL THEORIES¹

THE last general report on Optics which was laid before the Association was read at Dublin by the late Dr. Lloyd in the year 1834, fifty-one years ago. Since then, in 1862, Prof. Stokes dealt very completely with double refraction so far as the elastic-solid theory is concerned, and there is little to add to what he said then. In all branches of his subject the fifty-one years since Dr. Lloyd's report have been most fruitful, and in consequence the mass of papers to be dealt with has been very large.

The report is divided into four sections: the first, which is introductory, deals with the work of Green, MacCullagh, Cauchy, and Neumann, the founders of the elastic-solid theory. In the second section the more modern writers on the elastic-

¹ Report presented to the British Association by R. T. Glazebrook, M.A. F.R.S.