

Black-backed Jackal (*Canis mesomelas*) from South Africa, presented by Mr. R. C. Cooper; a Wild Cat (*Felis catus*) from Scotland, presented by Mr. Claude Alexander; a Silver Pheasant (*Euplocamus nycthemerus*, ♂) from China, presented by Mr. W. McNaughton Love; two Thars (*Hemitragus jemlaicus*, ♂ ♀) from the Himalayas; a Long-billed Butcher Crow (*Cracticus destructor*) from New Holland; a Laughing Kingfisher (*Dacelo gigantea*) from Australia, deposited; a Thick-tailed Opossum (*Didelphys crassicaudata*, ♀) from La Plata, a White-eyebrowed Guan (*Penelope superciliaris*) from South-east Brazil, a Little Guan (*Ortalis motmot*) from Guiana, three Elliot's Pheasants (*Phasianus ellioti*, ♂ ♀ ♀) from China, purchased.

OUR ASTRONOMICAL COLUMN.

COMET 1899 *a* (SWIFT).—Three telegrams have been received from Kiel announcing the discovery of the first new comet of this year. Two observations of it appear to have been made, the respective positions being as follows:—

1899.	R.A.	Decl.
	h. m. s.	
March 3 ...	3 45 0	− 29 0 0
4 ...	3 48 0	− 27 7 0
6 ...	3 37 8	− 24 8 32

It is described as being bright enough to be seen with the naked eye, and having a slow movement.

The comet should be looked for immediately after sunset in the south-eastern sky. At present it is about 12° due south of the 2nd magnitude star γ Eridani, passing the meridian about 5.30 p.m. As a guide to its position, it is nearly on the line joining α and β Orionis, about twice as far from the latter as these two stars are apart.

TUTTLE'S COMET.—Another telegram from Kiel communicates an ephemeris of this comet, which has been computed by J. Rahts from data obtained in 1885.

Ephemeris for 12h. M. T. Berlin.

1890.	R.A.	Decl.	Br.
	h. m. s.		
March 5 ...	0 59 58	+ 33 36.2	...
7 ...	1 7 23	33 17.8	0.62
9 ...	14 51	32 58.5	...
11 ...	22 21	32 38.2	0.66
13 ...	29 52	32 16.9	...
15 ...	37 25	31 54.4	0.70
17 ...	45 0	31 30.8	...
19 ...	1 52 35	31 6.2	0.75
21 ...	2 0 10	30 40.0	...
23 ...	7 47	30 12.8	0.80
25 ...	15 23	29 44.2	...
27 ...	2 23 0	+ 29 14.4	0.86

The brightness, in terms of its intensity in 1885, August 10, this being unity. The above positions extend from about half-way between α and β Andromedæ to the centre of the constellation Triangulum. It should be looked for soon after sunset.

As we go to press, a telegram has been received announcing the observation by Herr Wolf of a comet sufficiently near the position given in the above ephemeris to suggest its being the same. The coordinates are as follows:—

1899.	R.A.	Decl.
d. h.	h. m. s.	
March 5 11.5	1 16 0	+ 31 38 0

No information is given concerning the brightness of the comet.

LOWELL OBSERVATORY.—In "Popular Astronomy," vol. vii. p. 74, Mr. A. E. Douglass gives a *résumé* of the planetary work which has been done at the Lowell Observatory, Flagstaff, Arizona, during the past four years. Observations of Mercury, by Messrs. Lowell and Drew, confirmed Schiaparelli's result that the planet rotates once during its revolution round the sun. Lines of various widths and dark patches were seen. Venus was examined by the same observers, and also found to continuously present the same aspect to the sun. The markings are faint but certain with good seeing. The prevailing straw-

colour seen is ascribed to the presence of an atmosphere. Mars has received special attention, Mr. Lowell having found a number of new canals and lakes. Much time was spent in tracing the seasonal changes on the planet. The white South Polar cap was observed to diminish as the equinox approached, and at the same time a dark line formed round it, the grey tint of the south temperate zone assuming a distinct bluish green, strongly suggestive of growing vegetation. Later this zone turned brown, and finally to a slowly lightening yellow.

The frequently observed projections on the terminator are ascribed by Prof. W. H. Pickering to clouds in the Martian atmospheres. These clouds appear to only form during the planet's night; and this, if true, helps to explain the high mean temperature of the planet as was suggested, in 1892, by Prof. Pickering.

Vesta is found to have a polar compression of $\frac{1}{10}$, the major diameter being almost in the direction of its orbit. The markings detected indicate a direct rotation in less than thirty hours. Jupiter's satellites have been carefully observed to compare with the results of Prof. Pickering at Arequipa in 1892. The period of rotation of Satellite I. is found to be 12h. 24' 0m.; its ellipticity is perceptibly greater than in 1892, and its mean diameter slightly less. Detail was seen in Satellite II., showing rotation, but no time deduced. Satellites III. and IV. have direct rotation, always presenting the same face to Jupiter.

The paper concludes with a proposal to establish a systematic notation for further expressing the observing conditions under which astronomical work is carried on. The author gives a "scale of seeing," based on the appearance of the stellar image in a lens of six inches aperture.

THE NORTHERN POLYTECHNIC, HOLLOWAY.

TO form a correct estimate of the existing provisions for the education of the millions who are crowded into the metropolitan area, it is essential to give an adequate consideration to the work being done by the fifteen separate institutions and branches which are included under the London polytechnics. The buildings in which this work is being accomplished may be estimated to have cost at least half a million sterling in capital outlay, and to be expending about 130,000*l.* annually upon some 50,000 students of the multitude of subjects for which provision is made. The receipts from fees and other miscellaneous sources do not exceed 30,000*l.*, leaving 100,000*l.* to be met from other funds. Private subscriptions probably amount to 10,000*l.* The contributions of the City Companies (principally the Drapers', Goldsmiths', and Skinners') provide some 20,000*l.* more. But at least 70,000*l.*, or about two-thirds of the net cost of the work, is drawn from public funds. The grants of the Science and Art Department may be estimated at 10,000*l.* The Central Governing Body of the City Parochial Charities contributes altogether about 30,000*l.*, and the London County Council, through its Technical Education Board, supplies 30,000*l.*, definitely allocated to the part of the work falling within the statutory definition of technical instruction.

"Each polytechnic institute is an independent organisation, unique in its deliberate combination of social intercourse, recreation and instruction. It is not subject to control by any Government department or other authority, and free, within the limits of its own trust-deed or other constitutional document, to move in whatever direction may be determined on by its governing body." They are, however, with one exception, based upon schemes of the Charity Commission and subject, to a certain extent, to ultimate control by that body. They necessarily defer to any suggestions made by the trustees of the City Parochial Charities, since they, all but two, receive large sums of money from them. The Technical Education Board of the London County Council exerts a very real authority over the educational work carried on in these institutions; for all of them, with two exceptions, are in a great measure dependent upon the large subsidies from this source.

It must not be lost sight of that "in every polytechnic institute the club rooms for men and women respectively, the concerts and entertainments of various sorts, the popular lectures and excursions, form a leading feature. Well-equipped gymnasia and playing-fields, billiards and other games, reading-rooms and lending libraries, as well as mutual societies of all kinds (debating, essay, Shakespeare, swimming, rambling, cycling,