organisms are Bacilli, which bear most resemblance to the *anthrax* Bacilli, but not smaller; (3) they are found in the blood, lungs, heart, and nervous tissue of persons dying of the disease; (4) they can be reared independently; (5) the Bacilli, which can live as parasites in the human organism, can also live and multiply out of it. These facts, which are said to be established by the investigations, explain how *beri-beri* patients can infect particular places, and how healthy individuals coming from uninfected places contract the disease in infected ones.

MR. W. H. BEEBY has reprinted from the *Scottish Naturalist* some interesting notes on the flora of Shetland. They are the result of a visit of about eight days to the Shetland Islands at the latter end of July last. Four distinct districts were visited, the greater amount of time being spent in Unst. Mr. Beeby is of opinion that the flora of the Shetland Islands is well worthy of further attention. An explorer would, he thinks, be rewarded by finding plants which are at present known only in the Faroes and in Scandinavia.

THE contents of Part 2, No. 3, of vol. lv. of the Journal of the Asiatic Society of Bengal include a short paper by Dr. King, on two new species of holly from the Eastern Himalayas, but are otherwise purely entomological. Prof. Forel continues his critical examination of Indian ants in the Calcutta Museum. Mr. de Nicéville describes nine new species of Indian butterflies, chiefly from Sikkim (which are to be figured in a succeeding number). Mr. Doherty, of Cincinnati, U.S.A., communicates a paper on new or rare Indian butterflies, many of which are from the Nicobar Islands; and Mr. E. T. Atkinson, President of the Society, gives a compilation of what has been written concerning Indian Coccidæ, which may be taken as an introduction to the study of this obscure and injurious family of insects in India. The author has chiefly followed Signoret in the systematic arrangement. The collected information will prove useful in India, for some of these scale-insects have been most destructive to coffee and other plantations. Having a clue as to how and what to observe, Indian entomologists will, no doubt, soon show that legions of Coccidæ exist in India, as elsewhere, and many strange forms will be detected.

THE additions to the Zoological Society's Gardens during the past week include a Gray Ichneumon (*Herpestes griseus*) from India, presented by Mr. C. F. Hird; a Golden Eagle (*Aquila chrysaëtus*) from Scotland; a Chilian Sea-Eagle (*Geranoaëtus melanoleucus*) from South America; a Brazilian Caracara (*Polyborus brasiliensis*) from Brazil, presented by Mr. C. Czarnikow; a Bronze-winged Pigeon (*Phaps chalcoptera*) from Australia, presented by Mr. Malcolm Nicholson; two Red-crested Cardinals (*Paroaria cucullata*) from Brazil; two Cockateels (*Calopsitta novæ-hollandiæ*) from Australia, presented by Colonel F. D. Walters; two Crested Newts (*Molge cristata*), presented by Mr. Alban Doran; a Lesser White-nosed Monkey (*Cercopithecus petaurista*) from West Africa; two Blue-fronted Amazons (*Chrysotis æstiva*) from South America, deposited; a Hog Deer (*Cervus porcinus*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

TELEGRAPHIC DETERMINATION OF AUSTRALIAN LONGITUDES.—A "Report on the Telegraphic Determination of Australian Longitudes," signed by Messrs. Ellery, Todd, and Russell, has recently been published by the Government of South Australia. This Report contains the final results of the operations connecting Singapore and Port Darwin, carried out in 1883 by Capt. Darwin, R.E., in concert with the Australian astronomers above mentioned. The Observatories of Melbourne, Sydney, and Adelaide were subsequently connected with Port Darwin. The preliminary results of these telegraphic longitude determinations were communicated by Mr. Todd in 1883 to Sir G. B. Airy, and published in the *Observatory* for October of that year. The longitude of Singapore adopted in forming the results given in the Report before us is that determined by Commander Green, U.S.A., in 1882, viz. 6h. 55m. 25·01s. East of Greenwich (for Capt. Darwin's station), assuming that of the Madras Observatory to be 5h. 20m. 59·42s. Hence the resulting longitudes are:—

		h.	m.	s.
Observatory,	Port Darwin	8	43	22·49
,,	Adelaide	9	14	20·30
,,	Melbourne	9	39	54·14
,,	Sydney	10	4	49·54
,,	Wellington, N.Z.	11	39	6·52
,,	Hobart	9	49	19·80

The observations for the purpose of connecting Singapore with the various points in Australia are given in sufficient detail in the Report to enable us to see that the determinations have been made with care and attention to detail, and appear to be deserving of every confidence. The New Zealand and Tasmanian results may perhaps require further correction.

COMETS AND ASTEROIDS.—Prof. Daniel Kirkwood has a brief note in the *American Journal* for January 1887, on the origin of comets, in which he points out the probability that two, at least, of recent short-period comets have had an origin in the zone of asteroids. Tempel's comet (1867 II.) has a period, inclination, and longitude of node approximately the same with those of Sylvia (Minor Planet No. 87), whilst its eccentricity is but little greater than that of Æthra (No. 132). Wolf's comet (1884 III.), before its last close approach to Jupiter, had an eccentricity which was exceeded by twelve known minor planets; its period was about 3619 days, and its mean distance 4·611, so that it would appear to have been simply a very remote asteroid. Its period was very nearly commensurable with that of Jupiter.

THE TAILS OF THE COMETS OF 1886.—Prof. Th. Bredichin has recently examined the curves of the tails of the three principal comets of last year in connection with his well-known theory as to the laws of formation of the tails of comets. The two first comets, those of Fahry and Barnard (1886 I. and II.), proved difficult to observe, the earth being nearly in the plane of the orbit of the former comet, so that the foreshortening greatly increased the errors of observations, whilst the tail of the latter was very short, and was diffused on one side. Both, however, were of the same type, the second, $1-\mu$ being found to be equal to 1·3 for the first, and 1·9 for the second. The third comet referred to, that discovered almost simultaneously by Mr. Barnard and Prof. Hartwig, proved much more important for the purposes of Prof. Bredichin's theory, since it showed three tails. Of these the principal one plainly belonged to the first type, a value of 17·5 for $1-\mu$ satisfying the observations very fairly. The shorter tail seen by a number of observers plainly belonged to the third type, $1-\mu$ being very small, whilst a third tail, seen by Mr. Backhouse (NATURE, January 6, p. 224), and lying between the other two, evidently belonged to the second type.

MINOR PLANET NO. 265.—M. Bigourdan points out (*Comptes rendus*, vol. civ. No. 9) that the motion of R.A. of this body is unusually rapid, amounting to – 1m. 40s., or double the ordinary value for the other asteroids. As the planet is nearly exactly in opposition, it must be relatively near the earth, and may therefore be very advantageously employed in the future for the determination of the solar parallax.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 MARCH 20–26

(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 March 20

Sun rises, 6h. 5m.; souths, 12h. 7m. 37·7s.; sets, 18h. 11m.; decl. on meridian, 0° 10′ S.: Sidereal Time at Sunset, 6h. 3m.

Moon (New on March 24) rises, 4h. 30m.; souths, 9h. 10m.; sets, 13h. 57m.; decl. on meridian, 15° 39′ S.