

formed lizards, I shall just mention a third endeavour which has been made to explain the black colour of the lizards inhabiting small islets.

In his interesting book, "Beiträge zur Descendenz-Theorie," Leipzig, 1876, Seidlitz has tried to introduce the belief that the black colour serves as an armour or protection to the animal against the burning rays of the sun. Thereupon I sought to prove that reptiles inhabiting the desert would need such a protection more than the others, yet they are not black.

As some might perhaps draw, from what I have said, the conclusion that, according to my hypothesis the reptiles of the desert should be also black, I must remark that the scorching rays of the sun in the desert effect so strong an elevation in the temperature of the soil, that it brings forth a relaxation in the animal, and slackens the energetic movement of the pigment, consequently the extreme heat counteracts the effect which the light produces, whilst on the islets of the Mediterranean the heat is alleviated by the sea breezes and by a certain degree of dampness. As we already know, all our European species of lizards carefully avoid the desert.

The dark-coloured lizards at present known, which inhabit small islets, are the following ones:—

1. *Lacerta muralis*, var. *archipelagica*, De Bedriaga: "Die Faraglioni-Eidechse." (Heidelberg, 1876; pp. 19.) *L. muralis*, var. B. Erhard: "Fauna der Cykladen," (Leipzig, 1858; pp. 80.) *L. muralis*, var. C., Schreiber: "Herpetologia europæa." (Braunschweig, 1875; pp. 408.) *L. muralis*, var. *archipelagica*, v. Bedriaga: "Herpetologische Studien," im *Archiv für Naturgeschichte*, 1878.

Back and extremities black, covered with rows of green spots. Belly and tail black. Inhabits the Cyclades.

2. *Lac. muralis* var. *melisellenis*, Braun: *Lacerta lilfordi* and *L. muralis*; "Arbeiten aus dem zoolog. zootom. Institut in Würzburg, 1877."

Back brown, ornamented with six light longitudinal stripes. Belly dark blue, chin rather lighter. Length 130 mm. Inhabits the islet Melisello near the island of Lissa, in the Adriatic Sea.

3. *L. muralis*, var. *filiflaensis*, De Bedriaga: "Die Faraglioni Eidechse." (Heidelberg, 1876.) Braun, l.c. v. Bedriaga: "Herpetologische Studien," in *Archiv f. Naturg.*, 1879, Günther: "Description of a new European Species of Zootoca," *Annals and Magazine of Natural History*, 1874.

Back black covered with small green specks, the under parts are deep blue. Length 212 mm. Inhabits Filifa, near Malta.

4. *L. muralis*, var. *faraglioniensis*, De Bedriaga: "Ueber die Entstehung der Farben bei den Eidechsen." (Jena, 1874.) *L. muralis* var. *carulea*, Eimer: "Zoologische Studien auf Capri." (Leipzig, 1874.) Braun, l.c.

Back black, the sides blue spotted with black; the belly a brilliant blue. Length 220 mm. Inhabits the Faraglioni Rock, near Capri.

5. *L. muralis*, var. *latastei*, De Bedriaga: "Herpetologische Studien," in *Archiv f. Naturg.*, 1879, pp. 264.

Back and sides brown, or dark brown covered with black spots, sometimes with bluish green spots on the sides. Above the root of the forelegs a bluish spot. Length 205 mm. Inhabits Ponza near Gaeta.

6. *L. muralis*, var. *lilfordi*, Günther: "Description of a New European Species of Zootoca," l.c. Braun, l.c.

Upper parts of a deep glossy black, lower parts of a beautiful sapphire blue. Length 175 mm. Inhabits the Island of Ayre, near Minorca.

7. *L. muralis*, var. *Gigliolii*, De Bedriaga: "Herpetologische Studien," 1879, l.c.

Forepart of the back covered with alternately green and blue stripes. The hind part of the back is dark blue. The sides are light brown with green and blue spots. The belly brick-red with (sometimes without) small blue stripes. Colouring varies. Length 175 mm. Inhabits Isla del Dragoneras near Majorca.

8. *L. muralis*, var. *Rasquineti*, De Bedriaga: "Herpetologische Studien," 1878, l.c.

Back olive brown with a black pattern. Blue eye-spots ornament the sides. Belly brick-red. The first longitudinal rows of the ventral scales are blue. Length 185 mm. Inhabits the islet La Deva near Arnao (Spain). J. VON BEDRIAGA Heidelberg, August 28

Insect Swarms

THIS year being remarkable for "insect swarms," it is important that all possible information about them should be gained,

so as to satisfactorily account for these phenomena. As to *Vanessa cardui*, which has been abundant throughout the spring and summer, it is possible that some of those specimens which occurred in the spring were the result of a migration from the Continent, but there is no doubt that the specimens which are now seen are nearly, if not all, bred in this country from ova deposited by the spring specimens, quite sufficient time having elapsed for the metamorphosis. With regard to *Pustia gamma*, I am of opinion that all the specimens seen, and they have been in profusion here from about August 10 till the present time, have been bred in this country. My reason for so believing is that the larvæ were most abundant in the spring, doing damage in gardens to a great extent. Some of these larvæ I fed up, the perfect insects emerging at the time *P. gamma* first appeared in abundance. My experience of the swarms of *P. gamma* is that they moved in no particular direction, merely passing in numbers from flower to flower, flowers being scarce this year, any apparent migration being simply a search for more flowers. Instead of putting the cause of these swarms down to "migration," endeavours should be made to discover the causes of the extraordinary periodical fecundity. It is quite probable, too, that next year, *P. gamma* and *V. cardui* will be scarce, as is frequently the case with *Colias edusa* and *hyale* after a year of abundance. J. H. A. JENNER

Lewes, September 13

Earthquakes

I HAVE observed, in several recent numbers of NATURE, various notices of earthquakes, so frequent as to suggest the idea to me (perhaps incorrect) that for several months past they have been more numerous than usual. Since my arrival in West Java I have experienced several severe shocks. On March 28, between 7 and 8 P.M., I was startled by a peculiar shivering as I sat in my chair. At first I imagined I was seized with a terrible feverless ague, but I was soon undeceived by the increased bumping and the clashing of my bottles, &c., and the vehement beseeching of *Tuhan Allah*, and the loud exclamations of the natives of, "We are here!" "We are all here!" I learned in a few days that several villages lying at the base of the peccant volcano, Gedè, had suffered; in particular the town of Ijandjoer, in which numerous houses were destroyed, many bridges broken down, the telegraph apparatus entirely thrown out of gear, and six or seven persons killed. The ground also opened and emitted volumes of smoke, while the Gedè itself burst out with extra vigour, throwing out, in addition to the usual white steamy vapour, large quantities of smoke and ashes, fortunately to no great distance. Throughout the 28th and 29th there was a succession of shocks. On June 3 I experienced a second earthquake, undulatory but not very severe; and again on the 5th, undulatory, of considerable duration, and severe enough to thoroughly shake the whole house and throw down unfixed objects. These have done no damage to life, as far as I have heard, and, beyond some houses being cracked in Batavia, little to property. Since the beginning of March there have been numerous shocks, but none so violent as those of March 28 and June 5. Immediately preceding the shock of June 5 there was a sudden and heavy fall of rain, the drops being very large. The direction of the wave was from east to west. HENRY O. FORBES

Kosala, Bantam, July

Leaping Power of Mantis¹

I CAN state from my own observations of several different species, both in Ceylon, South Africa, and Fiji, that the power is possessed by many, chiefly in the larval stage, and that the distances they can spring from branch to branch are very considerable for the size of the insect. E. L. LAYARD

British Consulate, Noumea

OUR ASTRONOMICAL COLUMN

THE OUTER SATELLITE OF MARS.—The following positions of *Deimos*, the exterior satellite of Mars, are deduced from the data published in Prof. Asaph Hall's memoir, in which he determines the elements of the satellite-orbits:—

¹ NATURE, vol. xx. p. 595.