

I

THE ANNALS
 AND
 MAGAZINE OF NATURAL HISTORY,
 INCLUDING
 ZOOLOGY, BOTANY, AND GEOLOGY.

(BEING A CONTINUATION OF THE 'ANNALS' COMBINED WITH LOUDON AND CHARLESWORTH'S 'MAGAZINE OF NATURAL HISTORY'.)

CONDUCTED BY
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 VOL. XIV.—EIGHTH SERIES.  
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Gambusia yucatanana, sp. n.

Depth of body $2\frac{2}{3}$ to 3 in the length, length of head $3\frac{1}{3}$ to $3\frac{1}{2}$. Diameter of eye $3\frac{1}{4}$ to $3\frac{1}{2}$ in the length of head, interorbital width about 2. 28 scales in a longitudinal series. Dorsal 7-9; origin above posterior end of base of anal (♀), equidistant from head and base of caudal (♂) or nearer caudal (♀); longest rays $\frac{1}{2}$ length of head. Anal 11; first and second branched rays somewhat produced, free edge emarginate (♀). Pectoral $\frac{3}{4}$ length of head or more, extending to above origin of anal. Caudal rounded or subtruncate. Least depth of caudal peduncle $\frac{2}{3}$ length of head. A dark bar below eye; series of small dark spots along rows of scales on upper part of body; dorsal and caudal fins spotted.

Progreso, Yucatan.

Four specimens (2 ♂, 2 ♀) up to 50 mm. in total length.

This species is closely related to *G. nicaraguensis*, but has a larger head and the dorsal fin further forward. The intromittent organ differs considerably in structure from that of males of *G. nicaraguensis* from Southern Mexico (cf. P. Z. S. 1913, p. 983, fig. 168, A); males from Lake Nicaragua have not yet been described.

XI. — *Preliminary Notes on the Local Races of some Canarian Lizards.* By CÆSAR R. BOETTGER and LORENZ MÜLLER.

THE material on which the following notes are based was collected by myself in 1913 on the Canary Islands, and was worked out together with Prof. L. Müller. A more detailed account of the Canarian Lizards, containing all described species, accompanied by coloured plates, is in preparation. For the present, it has seemed useful to give a preliminary account of the more noteworthy points, together with diagnoses of some new local races of *Lacerta galloti*, Dum. et Bibr. We have to thank Hofrat Dr. Steindachner, at Vienna, for having sent us for comparison some lizards of O. Simony's collection, preserved in the Hofmuseum.

CÆSAR R. BOETTGER.

I.—*LACERTA GALLOTI*, DUM. ET BIBR.

In working out the material of *L. galloti*, Dum. et Bibr., before us, it became at once apparent that each of the islands

where this species occurs is inhabited by a well-marked geographical race or subspecies. We first give a rather accurate description of *Lacerta galloti galloti*, and then differential diagnoses of the new subspecies.

Lacerta galloti galloti, Dum. et Bibr.

Lacerta galloti, A. M. C. Duméril et G. Bibron, *Erpétologie générale*, tome v. (Paris, 1839), pp. 238-240.

Type-locality. Island of Tenerife.

Proportions. General body-form stout; head large, its length somewhat more than $\frac{1}{4}$ of the length of head and body, moderately flattened; ♂ with the cheeks very broad. Snout slender, rounded in front. Neck slightly constricted in front of shoulders; rump broad, moderately flattened; limbs strong. Length of fore limb about $\frac{1}{3}$, of hind limb about $\frac{1}{2}$, of tail about twice that of head and body.

Scales. Rostral not in contact with nostril. Only post-nasal in contact with first and second supralabial. 5 of the 8 supralabials in front of subocular. Fronto-nasal as long as broad, usually shorter than præfrontals; præfrontals $1\frac{1}{2}$ to $1\frac{2}{3}$ as long as broad. Frontal very variable in size and shape, its length sometimes equal to breadth, but sometimes even $1\frac{1}{2}$ to $1\frac{2}{3}$ of it; anterior angle pointed or obtuse, always shorter than its distance from rostral. Fronto-parietals $1\frac{1}{3}$ to $1\frac{2}{3}$ as long as broad. Parietals $1\frac{1}{2}$ to $1\frac{2}{3}$ as long as broad, as long or somewhat longer than distance of frontal from snout. Interparietal generally small. Occipital very variable in shape and size; in some specimens it is much larger than the interparietal, in others equal to it, its length being sometimes equal to the breadth, but sometimes much longer. In some specimens the lower margin of occipital is as broad as frontal, in others half its breadth, &c. 4 supraoculars, the two central ones largest, separated from the supraciliaries by a well-defined series of granules. Orbit surrounded by a ring of small shields, the anterior and inferior ones are very small, whereas the posterior 3 or 4 are large. The uppermost of these four shields, which is the largest, is in contact with the last supraciliary and the last supraocular. Behind these four shields there are three, of which the lowermost, which touches the subocular and the seventh supralabial, is the largest; the uppermost, which sometimes extends to the lower parietal margin, is the smallest. Lower parietal margin bordered by 5 supratemporals—rarely 4 or 6. Temporal scales small, the upper rounded or polygonal ones usually smaller than the lower

oblong ones ; all not keeled. Masseteric usually broad, now and then replaced by two or three smaller shields, rarely entirely absent. A large, oblong, tympanic, upper margin of ear-opening always present. 7 sublabials. Behind the symphyseal 5 pairs of large chin-shields, followed by another pair, which is usually small, but now and then quite well developed. As a rule, only the shields of the two anterior pairs in contact with one another. Collar with very slightly or slightly serrated edge, composed of 9 to 15 shields. Gular fold always visible, generally very distinct. 38 to 45 scales in one line between collar and third pair of chin-shields. Dorsal scales small, roundish-rhomboidal, flat on sides of body, keeled in the middle of back. Between the individual scales there are minute granules, which never form complete rings round the dorsal scales as in *Lacerta simonyi*, Steind., but are limited to their anterior and posterior margins. 87-106 scales across the middle of the body, but usually less than 100. 3 to 4 lateral scales correspond to the length of one ventral shield. Ventrals in 12 to 14 longitudinal and 29-31 transverse series. Laterally of the ventrals there are always large lateral scales ; now and then the lateral scales gradually pass into the ventrals. Therefore, all the shields which are less than $\frac{2}{3}$ of a normal ventral are not counted as such.

Differentiation of ventrals variable. Shields of the first transverse series decidedly longer than broad. Pectoral triangle always well developed ; shape of ventrals of the different series different. Shields of the two median series as long as broad, the two following on the right and left distinctly broader than long, the extreme lateral ones longer than broad.

Except the number of the longitudinal series, the differentiation of the ventrals appears to be an important character, which separates the races of *Lacerta galloti*, Dum. et Bibr., from those of *Lacerta simonyi*, Steind. It would also seem that this character is of special importance with regard to the question which of the two large species of *Lacerta* in the western group is more primitive.

Præanal hexagonal, usually broader than long, about $\frac{1}{3}$ of the breadth of anal opening, surrounded by 2 (rarely 3) semicircles of small plates.

Forearm with two, upper arm with one series of broad shields ; anterior surface of thighs and lower legs also with a series of transverse plates. The differentiation of the scales has gone further here than in *Lacerta simonyi*, Steind., in which there are no broad shields at all on the upper arm,

and those on the thigh are less perfectly developed than in *Lacerta galloti*, Dum. et Bibr. Scales of outer surface of lower leg distinctly keeled and smaller than those of back. 24 to 31 femoral pores.

Caudal shields long and narrow, truncated behind; distinctly keeled on upper side of tail, less so below, especially at base of tail, where it is often scarcely visible.

Colour. Very variable.

Female and young specimens usually with more or less well-defined longitudinal light and dark lines and stripes. In the usually olive-brown or greyish-brown young and female specimens, the dark dorsal zone is generally bordered on each side by a paler dorso-lateral one. There may be or not two dark longitudinal stripes from the posterior parietal margin to base of tail, which are variable as regards breadth and distinctness; accordingly the pale dorso-lateral zone is more or less sharply set off from the median dark one.

Pale dorso-lateral zone strongly constricted occasionally, especially at neck, where colour becomes lighter and more intense. In this case it forms a pale stripe, which sometimes extends to the hips, but usually becomes, by and by, broader and indistinct on rump. Below pale dorso-lateral zone a well-marked dark lateral band, followed below by another pale zone. Between the last and the ventrals there is a further dark zone. Sometimes the lower pale zone is narrowed to a well-defined stripe. In many *young* specimens there is a short, often interrupted stripe from orbit to upper margin of tympanic.

Transverse bands formed of pale spots and lines, which often fuse to form transverse bars, but are usually separated from one another by the black areas which surround them. These markings are best developed on the flanks, but often reach the middle of the back. By the combination of the transverse and longitudinal markings a great variation in the style of marking is produced, which will be described more fully in a forthcoming paper.

In the females there is a row of blue spots in the upper part of the dark lateral band, and another composed of very pale spots near the margin of the ventrals.

Under side olive-green, yellowish, or reddish grey, sometimes darker-clouded. Chin and throat with a number—usually three pairs—of greyish-black stripes, converging forwards. In many specimens there are pale round spots on a greyish-black ground on the lower part of the sides of neck.

Old *males* as variable as old females. The most common

colour-phase has a dark rusty-brown rump and bright greenish-yellow or green transverse bands and spots, which are best developed on neck and anterior back. This light green reticulation is developed from the marking of the young animals; the transverse rows of spots fuse and form transverse bars and lines, and their colour changes from pale or yellowish grey to green.

In connection with this process the ground-colour of the body becomes darker and often nearly, or totally, obliterates the light areas. The head, neck, and throat become deep brownish black, chest and belly black, posterior portion of belly strongly clouded with reddish. Cheeks below tympanic lighter or darker bluish grey, this colour only slightly extending to throat. The two rows of blue spots, so strongly developed in the female, only extend to chest or loins. Now and then these spots are very large on the shoulders.

In another colour-phase the transverse bands are little or not developed, the ground-colour being very dark, nearly black, and the two rows of blue spots more or less distinct and often the only marking. This style of marking corresponds to that of the local race of *Lacerta simonyi*, Steind., inhabiting the Roques of Salmore.

There are all kinds of intergradations between these two forms, and there are also specimens of a uniform deep brown colour.

Length of head and body in the two largest measured specimens: ♂ 135 mm., ♀ 126 mm.

Distribution. Island of Tenerife.

Lacerta galloti palmae, subsp. n.

Type-locality. Island of Palma.

Type. Munich Museum (Zool. Samml. München, no. 241/1913).

This form is smaller than the Tenerife race. The largest males measured were about as large as medium-sized males from Tenerife. The structure of the scales is almost exactly as in *Lacerta galloti galloti*, Dum. et Bibr.; the colour, however, is constantly different.

♂. The variation is comparatively limited, not by far so enormous as it is in the typical race. Markings of *male* comparatively simple. Bright green spots and transverse bands, so characteristic of most of the Tenerife specimens, always entirely absent. Ground-colour of upper side more or less dark brown with a yellowish or bluish hue. Head, sides of neck, and anterior portion of rump, also underside of

head, neck, and chest deep black. The black colour gradually becomes lighter posteriorly and, on the sides, passes through bluish grey into brown and, on the lower surface, dissolves into a spotting and clouding on a reddish or bluish-grey ground. Dorsal zone, especially on the posterior third of rump and base of tail, nearly always traces of the two dark longitudinal bands often found in the female of *Lacerta galloti galloti*, Dum. et Bibr. More or less distinct traces of a transverse striping only on posterior half of rump, whereas in *Lacerta galloti galloti*, Dum. et Bibr., the strongest striping is always on neck and anterior portion of rump.

These transverse bars are never green as in *Lacerta galloti galloti*, Dum. et Bibr., but are bluish or brownish grey. Two rows of blue spots of variable size and intensity on sides of body, which are largest on anterior portion of rump and often almost disappear posteriorly. The blue spots on the shoulders are always the largest, but never attain the size and irregular shape often found in the Tenerife form. A very distinctive character of the male is an enormous *cheek-patch* of a bright blue colour, which begins below the masseteric, which has the same blue colour and extends anteriorly to the posterior margin of the third pair of gulars, posteriorly to about midway between collar and gular fold. Below, the two cheek-patches are merely separated by a narrow black zone, but even that may be absent. Limbs lighter or darker brown, hind limbs with generally slightly developed eye-spots. Lower margin of every second caudal ring with lighter spots.

♀. By far most of the *females* with very distinct longitudinal stripes. Transverse stripes only indistinctly developed and only on posterior back. Female and young specimens with the same gular markings as in *Lacerta galloti galloti*, Dum. et Bibr.

Length of head and body in the two largest measured specimens: ♂ 112 mm., ♀ 98 mm.

Distribution. Island of Palma.

Lacerta galloti gomerae, subsp. n.

Type-locality. Island of Gomera.

Type. Senckenberg Museum, Frankfurt (M.), no. 6041, 2 a.

Size and scales. Smaller than *Lacerta galloti galloti*, Dum. et Bibr., and *Lacerta galloti palmae*, C. Bttg. et L. Müll.; scales slightly different from the typical form. 6 pairs of large chin-shields, the last pair, which is usually rudimentary

in *galloti* and *palmae*, being well developed; number of ventrals usually less—minimum 10 instead of 12,—*galloti* and *palmae*, maximum always below 14.

♂. *Colour of male* dark. Markings, if at all present, reduced to longitudinal stripes. Very small light yellow or grey points, found all over the back, must apparently be regarded as the last traces of transverse bars. Except these points and some blue eye-spots, there are no markings on neck and anterior back; but there are traces of dark bands on posterior back and root of tail on a slightly paler ground. In very dark specimens head and neck are deep black, as is also lower surface, except that of tail which is reddish grey. Posterior portion of belly sometimes paler. The two lateral rows of ventrals with more or less numerous blue spots. There are also blue spots on the limbs, of which a larger one on upper arm close behind shoulder and one on thigh are especially characteristic for this race.

In the lighter specimens, which are clay-coloured, there are two comparatively narrow dorso-lateral bands from parietals to root of tail, where they fuse on neck and anterior back. They are bordered below by a narrow pale stripe. Lower surface as in the dark specimens.

♀. Ground-colour of *female* greyish to reddish brown. From superciliaries to first third of tail a yellowish-brown stripe, which is light and narrow anteriorly, broader and darker posteriorly, and margined posteriorly on each side by a narrow brownish-black band, both of which fuse on anterior fourth of tail. Laterally follows a broad dark lateral band, margined by a light line, which begins below the auditory meatus and is only distinct on neck and anterior back. A light stripe from eye across masseteric and upper margin of auditory meatus, which is broken up into spots in the temporal region. Throat, chest, and anterior portion of belly black as in male. Small, round, whitish spots on sides of neck. Posterior portion of belly lighter, bluish grey. Flanks with occasional light spots, probably the remains of transverse bars. Small blue spots at upper end of limbs as in male.

Young. Colour as in ♀. Lower surface much lighter, pale reddish yellow. Throat deep black, with some light spots on sides of neck.

Length of head and body in the two largest measured specimens: ♂ 102 mm., ♀ 83 mm.

Distribution. Island of Gomera.

Lacerta galloti cæsaris, Lehrs*.

Lacerta cæsaris, Lehrs, Abstract of the Proceedings of the Zoological Society of London, no. 134, p. 41 (1914).

Type-locality. Island of Hierro.

Very small, even the largest specimens not larger than good specimens of *Lacerta serpa*, Raf. Female and young specimens with very distinct stripes.

The discovery of a pigmy race of *L. galloti* on Hierro Island is very striking, the more so as one was inclined to suppose that it was inhabited by *L. simonyi*, Steind., which, however, was not procured, and obviously does not occur in Hierro in our days. This new race proves to be very closely related to *L. g. gomeræ*, from which it has evolved by extreme specialization. The size has been reduced and the markings still more developed. The number of scales has also been reduced, the ventrals being never more than 12, but only 10 in a greater percentage of specimens than in *gomeræ*. Maximum number of scales across middle of body 107. There are almost no interspersed granules. 6 pairs of large chin-shields behind symphysial.

As in *gomeræ* there are *dark males* with only small spots on a brownish-black ground. Blue shoulder-spots minute, spots on thigh and upper arm well developed. Lower surface, except that of tail, deep black.

Light phase of males also as in *gomeræ*, except that the dark dorso-lateral bands are broader and with light spots and intervals upon them. Posterior part of belly sometimes bluish grey.

♀ much as in *gomeræ*; dark bands broader and more pronounced, generally deep dark brown; light stripes very light, narrow and well defined almost for their entire length. Throat and chest always black, belly greyish blue.

Young with light belly, throat always black.

Length of head and body of the two largest measured specimens: ♂ 82 mm., ♀ 78 mm.

Distribution. Island of Hierro; one specimen collected on the largest of the Roques del Zalmore.

* After this paper had been finished, I received the Abstract of the Proc. Zool. Soc. of London, May 13th, 1914, where Dr. Lehrs described the Hierro form of *galloti* as a new species, *Lacerta cæsaris*. He based his investigations on materials collected by myself at Las Lapas in the Island of Hierro. I do not think it justified to regard this lizard as a distinct species. Dr. Lehrs did not see how nearly his *Lacerta cæsaris* comes to the subspecies of *Lacerta galloti*, especially to *Lac. gall. gomeræ*. I therefore regard *cæsaris* as the Hierro subspecies of *Lacerta galloti*. The coloration of *cæsaris* is, in my opinion, not a primitive one, but, on the contrary, is highly specialized.—C. R. BOETTGER.

II.—THE SPECIES OF *CHALCIDES* OF THE WESTERN CANARIES.

The specimens of *Chalcides* from Gran Canaria, of which Steindachner has described a number of colour-varieties, are constantly distinguished from typical *C. viridanus*, Grav., of Tenerife, Gomera, and Hierro not only by their colour and markings—which may vary in all of them,—but also by the proportions of their body. They have not the formless cylindrical shape and the small head which is not set off from the neck, nor the short thin limbs, but their head is larger and thicker, better set off from the neck; the neck is longer in proportion to the body and slightly constricted in front of the shoulders, and the limbs are longer and stouter. In addition to these habitual characters, the throat and belly are *never* black as in typical *viridanus*. There is, further, a tendency to develop longitudinal stripes, a character never observed in any of the numerous specimens of *C. viridanus*, Grav., from Tenerife, Gomera, and Hierro.

The *Chalcides* of Gran Canaria must therefore be regarded as a separate species, for which the oldest name is *Chalcides sexlineatus*, Steindachner.

Chalcides viridanus, Grav.

Gongylus viridanus, J. L. C. Gravenhorst, Verhandlungen der Kaiserlichen Leopoldinisch-Carolinischen Akademie der Naturforscher, 15. Band (Breslau und Bonn, 1851), 1 Abtheilung, pp. 348-350, Tab. xxxv.

Type-locality. Island of Tenerife.

Proportions. Body regular cylindrical, rather slender. Head small, scarcely set off from neck, moderately high, with slightly broader cheeks in ♂, which, however, are always distinctly narrower than rump. Distance from snout to auditory meatus $6\frac{3}{4}$ –7 times contained in that from snout to anus in ♂, $7\frac{1}{2}$ – $7\frac{3}{4}$ in ♀. Neck relatively short, indistinctly set off from rump. Distance from snout to shoulder contained in that from shoulder to loin twice in ♂, $2\frac{1}{2}$ times in ♀. Limbs short and weak, lower leg flattened; length of fore limb contained in that of head and body at least $5\frac{1}{2}$ times in ♂, 6 times in ♀, of hind limb $3\frac{3}{4}$ –4 times in ♂, $4\frac{1}{2}$ in ♀. Tail usually regenerated in adults, in younger specimens its length is about $1\frac{1}{4}$ that of that of head and body.

Scales. Nostril in front of suture between rostral and first supralabial. Rostral twice as broad as high, concave behind; supranasals in contact with one another. Internasal broader

than long. Frontal slightly longer than broad; interparietal moderately large. Parietals forming a suture behind interparietal. Fifth supralabial below the eye. Lower eyelid with transparent disc. 4 supraoculars. Parietal bordered laterally by 2 large supratemporals. Scales in 28-32 longitudinal series.

Colour. Fairly constant. Upperside coppery or olive-brown, with metal gloss. Sides of neck, rump, tail, and limbs deep brownish black. Lower surface deep black or bluish grey, with black centres to the individual scales. Brown dorsal zone separated from black sides by a slightly paler longitudinal stripe which occupies two scales in breadth. A number of small light yellow or metal-greenish spots, with darker margin, usually placed in 8-9 irregular longitudinal lines on back.

Length of head and body in the two largest measured specimens: ♂ 87 mm., ♀ 89 mm.

Remarks. In most of the specimens from Hierro and Gomera there is a number of small bluish-white points and lines in the dark lateral zone; but there are also specimens without any markings on upper surface and sides, and occasionally these markings are found in animals from Tenerife. We are therefore not at present prepared to regard the *Chalcides* from Gomera and Hierro as a separate subspecies.

Distribution. Islands of Tenerife, Gomera, Hierro.

Chalcides sexlineatus, Steindachner.

Chalcides viridanus, Grav., var. *sexlineata*, F. Steindachner, Sitzungsberichte der Mathematisch-Naturwissenschaftlichen Classe der Kaiserlichen Akademie der Wissenschaften, C. Band, 1 Abtheilung (Wien, 1891), pp. 302-304.

Type-locality. Caldera de Tirajana, island of Gran Canaria.

Proportions. More like a *Mabuia* than a *Chalcides*. Rump cylindrical, flattened above, with well-differentiated head and neck, in strong contrast to *C. viridanus*, Grav. Head comparatively large, well set off from neck, rather high and broad, with very broad cheeks in ♂, head therefore much broader than neck and scarcely narrower than rump; head in ♀ slightly narrower than neck. Distance from snout to auditory meatus contained in that from snout to anus $5\frac{1}{2}$ -6 times in ♂, $5\frac{3}{4}$ -6 times in ♀. Neck rather long and distinctly set off from rump. Distance from snout to shoulder contained in that from shoulder to loin 2 times in ♂, occasionally a trifle more in ♀. Limbs short but stout, lower leg not flattened. Length of fore limb contained in

that from snout to anus always less than 5 times in ♂ and ♀, of hind limb $3\frac{1}{4}$ – $3\frac{1}{2}$ times. Tail at most $\frac{1}{6}$ longer than head and body.

Scales. As a whole, much as in *C. viridanus*, but the average number of the longitudinal series of scales larger, up to 35.

Colour. The most primitive form as regards colour and markings appears to be the phase called "*bistriata*" by Steindachner. Back roe-brown, with light whitish-grey spots with black margin, arranged in longitudinal rows. Dorsal zone margined by a narrow light stripe from supra-ciliaries to base of tail, which is margined with black in many specimens. Upper half of lateral zone occupied by blackish-brown band with lighter spots, extending from eye to loin and base of tail; lower half light, with darker and lighter spots, so as to form a "pepper-and-salt" coloration. Limbs brown, with dark margins to the scales and lighter and darker spots. Tail brown, with darker median and lateral zone and indistinct light spotting. Lower surface yellowish to greenish white, with small grey points on belly. Throat ochraceous yellow.

Steindachner's "*var. nigrescens*" is based on melanistic specimens of this type.

The "*var. sexlineatus*" of Steindachner is most strikingly marked. Dorso-lateral band deep black, extending from nostril to base of tail, separated from lateral zone, which is also deep black, by a narrow light yellow or greyish-white line. Dorsal zone with 4 narrow yellowish-brown lines. Lateral zone divided into a broader upper and narrower lower portion by a very narrow greyish-white line, extending from ear across shoulder to loin. A second white line, margined black on border of lateral and ventral zone on anterior portion of rump. Limbs brownish, with narrow blackish margins to the individual scales. Chin and throat ochraceous yellow; chest and belly bluish, paler anteriorly, darker posteriorly. Tail metal-blue, scales of upper sides margined with black.

Length of head and body in the two largest measured specimens: ♂ 87 mm., ♀ 81 mm.

Distribution. Island of Gran Canaria.

III.—*TARENTOLA DELALANDEI*, DUM. ET BIBR.

The Geckos of Gran Canaria are a well-characterized race which has been separated by Steindachner as *Tarentola*

delalandei boettgeri. The Geckos of Tenerife, Palma, Gomera, and Hierro must be included in *Tarentola delalandei delalandei*, Dum. et Bibr., although there is a good deal of local variation; specimens from Tenerife and Palma are fully identical, in those from Gomera there occur many in which the dorsal tubercles are whitish grey; the Geckos from Hierro are, as a rule, more different, and more approach *T. d. boettgeri*, Steind. These differences, however, seem to us to be too slight to be of subspecific importance.

XII.—Notes on the Forficularia.—XXII. Notes on the Wing-venation in the Dermaptera. By MALCOLM BURR, D.Sc., F.E.S., &c.

[Plates III.-V.]

THE beauty of the earwig wing has long been a favourite theme of writers on Natural History, but it was only so recently as 1911 that any attempt was made to employ its structure as a taxonomic character. This was in a chapter in Zacher's important paper on the genitalia in the Protodermaptera ("Studien über das System der Protodermapteren," Zool. Jahrb. xxx. p. 303, 1911), a work which we shall have occasion to discuss in greater detail elsewhere.

The difficulty of opening and mounting this extremely delicate organ has been the chief obstacle, but it must be remembered, too, that very many genera are totally apterous. Still, it is most probable that very useful characters may be found in the venation.

The earwig wing resembles that of the Gryllid genus *Tridactylus*, and of the Phasmids, in that the anal area is enormously developed at the expense of their other parts. In the earwig wing there are five distinct portions.

The *marginal area* is a small, narrow, acuminate field at the base of the anterior margin; it contains no veins.

The *squama* is the chitinised portion which usually protrudes from beneath the elytra when at rest, and is generally of the same texture and coloration as the elytra themselves. It is narrower at the base and dilated towards the apex.

Beyond the squama, and separated from it by a vertical hinge, is the lanceolate *apical area*. These three portions between them occupy almost the whole of the costal margin of the wing.