which type of distortion produces the resonance detected by Travis and Buchanan.

HUGH SKILLING

STANFORD UNIVERSITY

## NOMENCLATURE OF THE VEGETABLE WEEVIL

THIS interesting weevil is one of the many insects which has recently emerged from natural obscurity and has appeared as an economic pest on three continents during the past twenty-five years, it having originated on a fourth. Its native habitat is the southern half of South America, from which area it has been carried by commerce to Australia, North America and Africa.

The first specimens were collected more than one hundred years ago on Magellan Strait and were described as *Listroderes costirostris* by the Swedish entomologist Schoenherr[1] in 1826. An aberrant form was later named *L. obliquus* by Gyllenhal[2] in 1834. There appears to be some confusion regarding the authority of *L. costirostris,* for in this latter publication, "Schoen. Gen. et Spec. Curcul.," vol. 2, p. 277, 1834, by L. Gyllenhal, and also in vol. IV, p. 189, 1842, by C. H. Boheman, the species is credited to Gyllenhal rather than to Schoenherr. L. L. Buchanan, U. S. Bureau of Entomology, very kindly looked up the original descriptions by Schoenherr and furnished the following information:

In 1826, Schoenherr ('Curculionidium disposito methodica . . . ,' page 158) erects *Listroderes* as follows:—'Genus 82. *Listroderes* nob.—*Merionus* Dej. *Character generis*:—' (12 lines of descriptive matter). Then, '*Descriptio*:' (Remainder of page 158 and more than half of page 159 taken up with a detailed description). Then, '*Typus*: *Listrod. costirostris* Gyllenh. n. sp.

Schoenherr's purpose here evidently was simply to describe a new genus, but the description, being based on one species, really amounts to a combined generic description of *Listroderes* and a specific description of *costirostris.* Under these conditions, it seems to me proper to consider *costirostris* as having been described by Schoenherr in this paper.

In 1881 Berg[3] gave some additional information regarding the weevil and listed it from the region of the Rio Colorado in central Argentina, but wrongly listed *Listroderes robustus* Waterhouse as a synonym of *L. costirostris.* Hustache[4] credited the species to Gyllenhal, and to its distribution adds Buenos Aires with the statement that the range extends northwards to meridional Brazil. His figure of *L. vicinus* Hust., pl. II, is very much like *L. costirostris.*

In 1908 this same weevil was discovered in South Australia, where it was described as a new species, *Desiantha nociva,* by Lea[5] in 1909. Along the eastern and southern coasts of that continent it soon became known as a pest of considerable economic importance to vegetable crops and to fruits and was generally called the buff-colored tomato weevil.[6] It was not until years later that the weevil was known to be of South American origin.

On the North American continent the weevil was first recognized as a newly introduced pest of truck crops at McHenry, Mississippi, on March 28, 1922, and was determined as the Australian tomato weevil and first listed as *Listroderes* (*Desiantha*) *nociva* (Lea).[7] Later it was designated scientifically simply as *Desiantha nociva* Lea.[8] Further studies and comparisons with known species convinced Chittenden that the weevil was *Listroderes obliquus,* which he credited to Fabricius.[9] It was also known as *Listronotus obliquus,* and is not to be confused with the American species by that name.[10] In 1926 the same species was discovered attacking vegetables at San Jose, California, and within a few years was known to occur in much of the San Francisco Bay region.

The very same weevil was recorded in South Africa in 1924, having been previously introduced into Port Elizabeth,[11] where it was found to be injuring turnips.

This rapid and wide distribution has no doubt been due to the transportation of infested vegetables from South American seaports used in ships' stores, and it is not unlikely that all these different foci of infestation have a more or less common origin.

Although the insect has generally been scientifically known as *Listroderes obliquus* (Gyll.),[12] Schenkling

[1] C. J. Schoenherr, "Disp. Meth. Curculionidum," p. 158. 1826.

[2] L. Gyllenhal, "Schoen. Gen. et Spec. Curcul.," vol. 2, pt. 1, p. 277. 1834.

[3] C. Berg, "Entomologisches aus dem Indianergebeit der Pampa." *Stett. Ent. Zeit.,* 42: 62, fig. 10. 1881.

[4] A. Hustache, "Curculionides de la Republique Argentine." *Ann. Museo Nacionale de Hist. Nat.,* Buenos Aires, 34: 199. 1926.

[5] A. M. Lea, *Trans. and Proc. Royal Soc. So. Austr.,* 33: 174–175. 1909.

[6] C. French, Jr., Handbook Destr. Ins. Victoria, pt. V, pp. 41–43, Oct., 1909; W. W. Froggatt, "The Buff-colored Tomato Weevil (*Desiantha nociva*)," *Agr. Gaz. N. S. W.,* Sydney, xxvi: 1065–1066. 1915.

[7] R. W. Harned, "A New Potato Weevil in Mississippi." *Quart. Bul. State Pl. Bd. Miss.,* 2: 1–2, pp. 6–8, 11–12. 1922.

[8] E. K. Bynum, "Controlling the Australian Tomato Weevil, *Desiantha nociva.*" *Ibid.,* 3: 1, pp. 22–24 (1923); F. H. Chittenden, "The Australian Tomato Weevil, Introduced in the South," U. S. Dept. Agr., Dept. Circ. 282, 8 pp., 6 fig. July 31, 1932.

[9] F. H. Chittenden, "An Introduced Weevil Related to the Vegetable Weevil." *Proc. Biol. Soc. Wash.,* 39: 71–74, pl. 1. 1926.

[10] An entirely different weevil, *Listronotus obliquus,* was described from Texas in 1876 by J. L. LeConte. *Proc. Am. Philos. Soc.,* 15: 128, 129. 1876.

[11] *Jour. Dept. Agr., Union South Africa,* 8: 3, pp. 264–265. 1924.

[12] E. O. Essig, "The Vegetable Weevil." "A History of Entomology," pp. 203–206, figs. 78–81 (Bibliography). New York: Macmillan. 1931. O. H. Lovell, "The Vegetable Weevil, *Listroderes obliquus.*" *Calif. Agr. Expt. Sta., Bull.* 546, 19 pp., 5 figs., December, 1932.

and Marshall,[13] in 1931, corrected the systematic nomenclature and have listed the species as *Listroderes costirostris* Schoenherr. As to the advisability of adopting this specific name in America, Buchanan has also kindly given his views as follows:

> The citing of *obliquus* in the Schenkling catalogue as an aberration ('ab.') indicates that the compilers regard it as some sort of a subordinate form, but not an absolute synonym, of *costirostris;* and, until the two are found to be synonymous through an examination of the type specimens or through other means, it would seem preferable to continue the use of the name *obliquus* Gyll. in North American literature, either as *obliquus* alone or as *costirostris* ab. *obliquus.*

The common name, vegetable weevil, was approved by the American Association of Economic Entomologists in 1931.[14]

E. O. ESSIG

UNIVERSITY OF CALIFORNIA

## NOMENCLATORIAL NOTES ON GASTROTRICHA

(1) THE genus *Dactylopodola* Strand:

*Dactylopodella* Remane, 1926, *Zeits. Morph. Ökol.,* 5: 664 non G. O. Sars, 1905, Crust. Norway, 5: 131 (Copepoda).

*Dactylopodola* Strand, March, 1929, Acta Univ. Latv., 20: 5.

*Dactylopodalia* Remane, 30 May, 1929, Kükenthal and Krumbach, Handb. Zool., 2 (4): 130.

Professor Embrik Strand kindly informed me personally of the month of publication of his paper. As a consequence of the above synonymy it is necessary to form the new family name Dactylopodolidae in place of Dactylopodellidae Remane 1927 and Dactylopodaliidae Remane 1929, and also the new combinations *Dactylopodola baltica* (Remane) and *Dactylopodola typhle* (Remane).

(2) *Lepidodermella* nom. nov.:

*Lepidoderma* Zelinka, 1889, *Zeits. wiss. Zool.,* 49: 300 non Reuss, 1856, Denks. Akad. Wiss. Wien, 10: 83 (Eurypterida).

As I can not find that this homonym has ever been corrected, I propose here as a substitute the name *Lepidodermella.* We have, hence, the new combinations *Lepidodermella squammata* (Dujardin), *Lepidodermella concinna* (Stokes), *Lepidodermella ocellata* (Metschnikov) and *Lepidodermella zelinkai* (Konsuloff).

CHARLES H. BLAKE

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

[13] S. Schenkling and G. A. K. Marshall, "Curculionidae: Cylindrorrhininae." Coleopterorum Catalogus (Berlin, Junk, 1931), pars. 114, p. 7, Feb. 12, 1931. (Bibliography.)

[14] *Jour. Econ. Ent.,* 24: 1291, 1303. 1931.

## MALVACEOUS PLANTS AS A CAUSE OF "PINK WHITE" IN STORED EGGS

A TYPE of deterioration in stored eggs in which the egg white becomes pink, and the yolk becomes large, salmon colored and watery in consistency, but turns rubbery when cooked, has caused severe losses in the United States in past years. Eggs from hens fed raw cottonseed products have been known to suffer the same or a similar type of deterioration, but most examples of "pink white" eggs on the market have come from flocks to which cottonseed products were not available.

It was discovered in this laboratory that the extracted yolk fat of "pink white" eggs, and also of fresh eggs from hens fed cottonseed oil gave the Halphen test for cottonseed. It was also discovered that seeds of certain members of the family Malvaceae (other than cotton) notably *Malva parviflora, Lavatera assurgentiflora* and *Althaea sp.* gave positive Halphen tests. Consequently, groups of hens were fed rations containing seeds of *Malva parviflora* and of *Lavatera assurgentiflora.* Eggs from these birds gave a positive Halphen test and also turned pink after a period of storage, while eggs from the same birds, before the seeds were added to the rations, gave a negative test and did not turn pink after the same period of storage.

It is concluded that these and possibly other members of the family Malvaceae when eaten by laying hens may become responsible for "pink white" deterioration in stored eggs. *Malva parviflora* is a common weed in poultry districts and is more available to poultry than other members of the family, so that this species is probably the important cause of "pink white" deterioration.

F. W. LORENZ
H. J. ALMQUIST
G. W. HENDRY

UNIVERSITY OF CALIFORNIA

## INCOMPLETE NUCLEAR DIVISIONS AND NOT AMITOSIS IN THE TAPETUM OF THE EUSPORANGIATE FERNS

IN 1913 the writer began an investigation of the nature of the nuclear divisions in the tapetum of *Botrychium virginianum* (L.) Swarz. He was soon led to the conclusion that the nuclei undergo incomplete divisions similar to those described by him in *Nephrodium hirtipes* Hk.[1]

As a result of this investigation, extending over a period of two decades, the writer has been convinced that the amitotic divisions described by some workers as occurring in the tapetum of the *eusporangiate* filicales do not take place.

[1] W. N. Steil, "Apogamy in *Nephrodium hirtipes* Hk." *Ann. Bot.,* 33: 109–133, 1919.