

TWO NEW AND TWO UNRECORDED INDIAN SPECIES OF  
*DROSOPHILA* (DIPT.) FROM KURSEONG, DARJEELING

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ON

Darjeeling, a hill station in West Bengal, is situated at an elevation of about 7,000 feet above sea level. Until recently very little has been known about the drosophilid species from this region. Duda (1923) described *D. bipectinata* from Darjeeling. More recently Jha, Misra & Singh (1971) recorded seven species from this region: *D. bipectinata*, *D. ananassae*, *D. melanogaster*, *D. kikkawai*, *D. busckii*, *D. malerkotliana* and *Chaetodrosophilella quadri-lineata*. Gupta (1974) includes Drosophilidae other than the genus *Drosophila* and gives a key to genera.

The present paper records 458 individuals representing nine drosophilid species, from different places in the vicinity of Kurseong, about 35 miles from Darjeeling at an elevation of about 5,500 feet above sea level.

## TAXONOMIC ACCOUNT

*Scaptomyza (Parascaptomyza) pallida* (Zetterstedt), 1847*Drosophila pallida* Zetterstedt, 1847, *Dipt. Scandinaviae* 6: 2571

A few males were collected particularly by sweeping over wild vegetation.  
Distribution. — Worldwide.

*Drosophila (Dorsilopha) busckii* Coquillett, 1901*D. busckii* Coquillett, 1901, *Ent. News* 12: 16.

Very common probably at all collection stations.  
Distribution. — Cosmopolitan.

*Drosophila (Drosophila) immigrans* Sturtevant, 1921*D. immigrans* Sturtevant, 1921, *Carn. Inst. Publ.* 301: 83.

A dominant species during the collecting period. Specimens mainly obtained by sweeping over fermenting fruits and vegetation.  
Distribution. — Cosmopolitan.

*Drosophila (Drosophila) trisetosa* Okada, 1966*D. trisetosa* Okada, 1966, *Bull Br. Mus. (nat. Hist.) Ent. Suppl.* 6: 99.

Our previous experience indicates that this species is poorly attracted to fermenting fruits. It is possible to obtain them by sweeping over wild vegetation.

Distribution. — Nepal and India.

*Drosophila (Sophophora) tristipennis* Duda, 1924

*D. tristipennis* Duda, 1924, *Arch. Naturgesch.* 90 (A3): 215, 247.

## General features of male and female

Acrostichal hairs regular, in 8 rows in front of dorsocentrals. Distance from anterior dorsocentral to posterior dorsocentral about half distance between 2 anterior dorsocentrals. Male fore legs with small sex-combs, metatarsal segment with three tough bristles, second tarsal segment with two similar bristles (fig. 1C).

C — index about 1.85 - 2.0; 4V — index about 2.57 - 2.8; 4C — index about 1.5; 5X — index about 2.3 - 2.8. Heavy bristles on about basal half of third costal section (fig. 1D). Other details as described by Okada (1966).

Periphallallic organs (fig. 1A): genital arch elongate, medially somewhat constricted, with about 25-30 bristles running from top of posterior margin along that margin downward. Primary clasper large, with a medial row of about 8 black teeth, ventromedial row of about 4 similar teeth, a cluster of a few thick bristles at tip; one thin bristle directed upward. Anal plate rounded above, with about 18-20 long bristles, ventrally narrowing, and with about 10 thicker bristles.

Phallic organs (fig. 1B): aedeagus slender, bifid, with deeply serrated margins. Anterior parameres small, black, articulated with aedeagus, apically somewhat swollen, and with 3 sensilla. Posterior parameres large, proximally bilobed. Novasternum with a pair of small submedian spines. Ventral fragma hemispherical.

Distribution. — Taiwan, India and Nepal

Remarks. — Differs from the original form in having sex-combs on both metatarsal and second tarsal segments of male fore legs.

*Drosophila (Sophophora) trilutea* Bock & Wheeler, 1972

*D. trilutea* Bock & Wheeler, 1972, *Univ. Texas Publ.* 7213: 17.

## General features of male

Arista with about 4 dorsal and 2 ventral branches in addition to the terminal fork. Palpus yellow, with one large apical seta.

Acrostichal hairs regular, in 8 rows in front of dorsocentral bristles, 6 rows between dorsocentrals. Distance from anterior dorsocentral to posterior dorsocentral about two thirds distance between 2 anterior dorsocentrals. Metatarsal sex-comb consisting of four large teeth; second tarsal segment with three similar teeth (fig. 1F).

Wings dusky between costa and second longitudinal vein. C — index about 2.8; 4V — index about 2.4; 4C — index about 1.0; 5X — index about 2.0 (fig. 1H). Other details as described by Bock and Wheeler (1972).

Periphallallic organs (fig. 1E): genital arch broad; toe elongate, narrow, with several large and small bristles. Primary clasper large, with about 3-4 short black teeth dorsolaterally, with a comb having 11 long teeth ventrolaterally, medially with 8-9 thin bristles. Anal plate oval, with numerous long bristles above, shorter below.

Phallic organs (fig. 1G): aedeagus fused, rounded apically. Anterior parameres large, articulated with aedeagus, distally pointed and black, with 3 subapical sensilla. Posterior parameres long, apically curved and pointed. Novasternum with a pair of long submedian spines. Ventral fragma triangular.

Distribution. — Taiwan, India (new record).

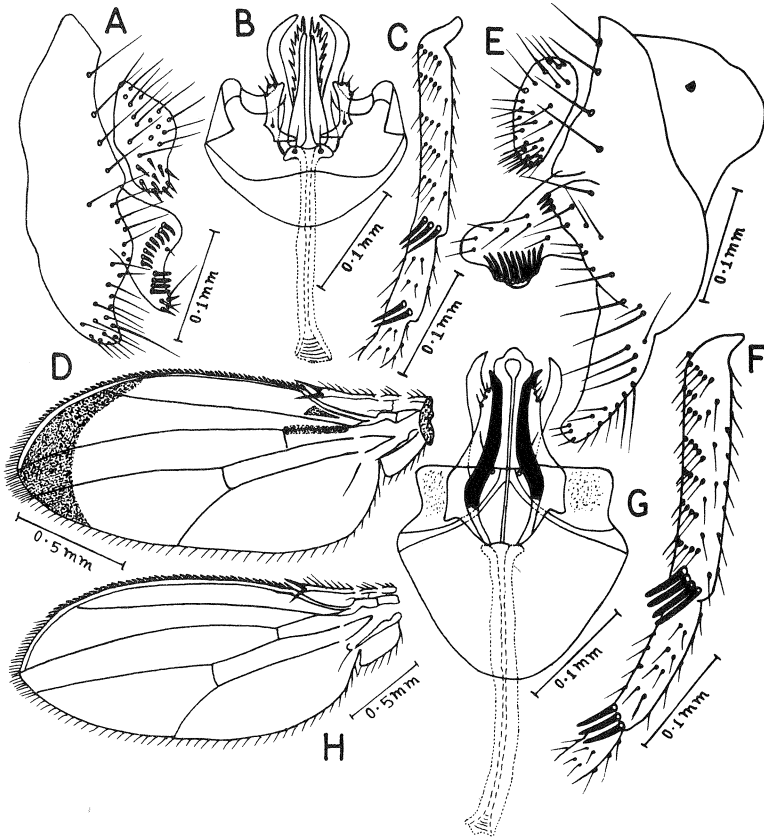


Fig. 1. — A-D, *Drosophila tristipennis* Duda: A, peripheral phallic organs; B, phallic organs; C, male fore leg; D, male wing. E-H, *Drosophila trilineata* Bock & Wheeler: E, peripheral phallic organs; F, male fore leg; G, phallic organs; H, male wing.

*Drosophila (Sophophora) lucipennis* Lin, 1972

*D. lucipennis* Lin, 1972, *Univ. Texas Publ.*, 7213: 23.

General features of male and female

Arista with about 4-5 dorsal and 2-3 ventral branches in addition to the terminal fork. Carina high, broad below.

Acrostichal hairs regular, in 6-8 rows between dorsocentrals. Distance from anterior dorsocentral to posterior dorsocentral about two-thirds distance between 2 anterior dorsocentrals. No recurved setae on male fore legs (fig. 2D).

C — index about 1.5 - 2.3; 4V — index about 2.4; 4C — index about 1.35; 5X — index about 2.3. Heavy bristles on about basal two fifths of third costal section (fig. 2E). Other details as described by Bock & Wheeler (1972).

Peripheral phallic organs (fig. 2A): genital arch large and broad, with a slender process having 2 fine hairs along its length, and with a large basal bristle and one distal apically recurved bristle; heel forming a spur-like projection, ventrally with a tuft of bristles consisting of about 7-8 strong, curved and 6-7 thin bristles; toe very large, broadly rounded, with several peripheral bristles. Primary clasper large, with teeth in two groups; upper group

with about 3 black teeth, lower with about 5 black teeth accompanied by 2 more short apically expanded spade-like teeth, laterally with about 4-5 curved bristles, ventrally with 2-3 curved teeth like bristles, one of which larger and directed upward. Anal plate with several long bristles dorsally, ventrally with 10-12 thicker bristles and apically with one large bristle.

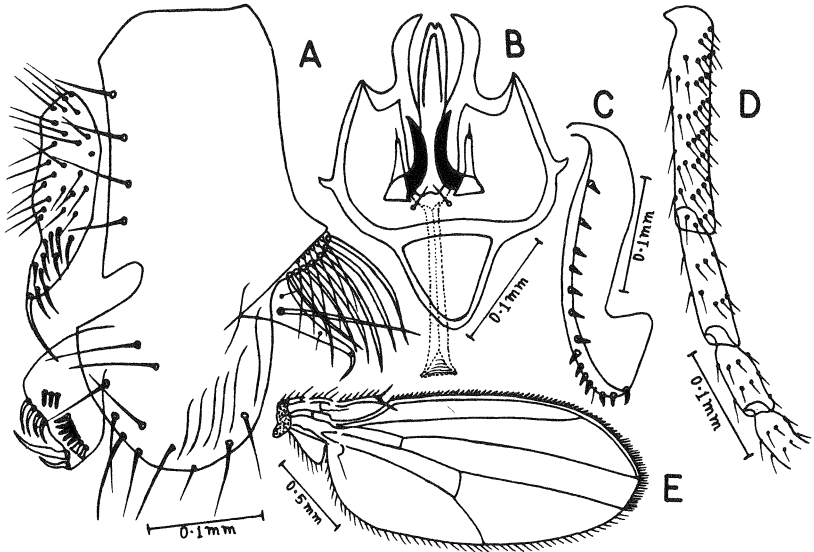


Fig. 2. — A-E, *Drosophila lucipennis* Lin: A, periphallic organs; B, phallic organs; C, egg-guide; D, male fore leg; E, male wing.

Phallic organs (fig. 2B): aedeagus long, slender. Anterior parameres large, bilobed, inner lobe black and pointed; outer lobe apically with one long hairy sensilla. Posterior parameres large. Novasternum with a pair of submedian spines. Ventral fragma triangular.

Egg-guides (fig. 2C): lobe yellowish brown, with about 14-16 marginal teeth, sub-terminal hair inserted between 3rd and 4th teeth.

Distribution. — Taiwan, India (new record).

### *Drosophila (Sophophora) kurseongensis* sp.n.

#### General features of male

Arista with about 4 dorsal and 2 ventral branches in addition to the terminal fork. Antennae yellow. Frons including ocellar triangle dark yellowish. Anterior reclinate orbital thin, orbitals in the ratio 7:3:7. Carina yellow, high. Second oral little more than half length of vibrissa. Palps yellow, with single large apical seta. Face and cheek yellow, greatest width of cheek from base of oral to eye border about one-sixth greatest diameter of eye. Eyes bright red.

Acrostichal hairs regular, in 6 rows between dorsocentrals. Anterior scutellars convergent. Distance from anterior dorsocentral to posterior dorsocentral about half distance between 2 anterior dorsocentrals. Mesonotum and scutellum unicolorous, shiny pale. Thoracic pleura pale yellow. Sterno-index about 0.6. Legs yellow, preapicals on all three tibiae; apicals on first and second tibiae. Metatarsal segment with a sex-comb consisting of 5 long teeth; second tarsal segment with two sex-combs, proximal with 4 teeth and distal with 2 similar teeth (fig. 3C).

Wings with a large dusky patch apically extending slightly beyond third longitudinal vein (fig. 3D). C-index about 2.8; 4V-index about 2.0; 4C-index about 1.0; 5X-index about 1.8. Two equal bristles at the apex of first costal section; heavy bristles on about basal one-third of third costal section.

First three abdominal tergites with thin apical black bands, remaining tergites completely black.

Perphallic organs (fig. 3A): genital arch broad; toe narrow and tapering, with two large and numerous small bristles. Upper portion of genital arch with 3-4 bristles, lower portion forming rounded process covering base of primary clasper, with numerous bristles. Primary clasper large and narrow, with about 5 distal black teeth, and 4-5 small bristles, one of which thicker and directed upward. Secondary clasper apparently fused with anal plate, with a large black tooth. Anal plate with long bristles dorsally, and about 10 thicker bristles ventrally.

Phallic organs (fig. 3B): aedeagus slender, somewhat swollen subapically, apically hooked, basal apodeme short. Anterior parameres large, bilobed, outer lobe narrowing apically, with 2 sensilla, inner lobe black and apically pointed. Posterior parameres weakly sclerotized, medially fused, serrated apically. Novasternum without submedian spines. Ventral fragma nearly as broad as long, rounded at tip. Length of male body, 2.7 mm; wing, 2.2 mm.

Holotype ♂, INDIA: Kurseong, St. Mary's Hill, Darjeeling district, West Bengal, October 1974 (Gupta & Singh). In the Department of Zoology, Banaras Hindu University, Varanasi, India.

*D. kurseongensis* superficially resembles *D. prostipennis* Lin in having a large dusky patch at the apex of male wings, but differs remarkably from *prostipennis* in having an unusually long and hooked aedeagus, secondary clasper with a large black tooth, metatarsal sex-comb with 6 large teeth; second tarsal segment with two sex-combs, proximal with 4 and distal with 2 similar teeth, primary clasper large and narrow, with about 5 distal black teeth. (Aedeagus apically rounded and notched, no secondary clasper, metatarsal comb in two rows, 2-4 usually 3 rows on second tarsal segment, primary clasper with 4-5 teeth dorsolaterally and ventrolaterally with a comb of 10-12 rounded teeth in *prostipennis*.)

Distribution. — India. Only this one specimen collected.

### ***Drosophila (Sophophora) noelegans* sp.n.**

#### General features of male

Arista with about 3 dorsal and 2 ventral branches in addition to the terminal fork. Antennae yellow; third segment little darker. Frons pale yellow. Ocellar triangle orange. Orbital bristles in the ratio 2:1:2. Carina narrow and high. Face and cheek yellow, greatest width of cheek from base of oral to eye border about one-ninth greatest diameter of eye. Palpus yellow, with one apical seta. Eyes red.

Acrostichal hairs regular, in 8 rows between dorsocentrals. Anterior scutellars convergent. Distance from anterior dorsocentral to posterior dorsocentral about two-thirds distance between 2 anterior dorsocentrals. Mesonotum and scutellum unicolorous, shiny pale. Thoracic pleura dark yellow. Sterno-index about 0.68. Legs yellow, preapicals on all three tibiae; apicals on first and second tibiae. Sex-comb on first three tarsal segments; metatarsal segment with 2-3 distal transverse rows of teeth, upper row consisting of 0-1-2, middle row with 2, lower row with 3 teeth; second tarsal segment consisting of 2-3 rows, upper with 0-2, middle with 2-3, lower with 2-4 teeth; third tarsal segment with 2 teeth, one above the other (fig. 3F).

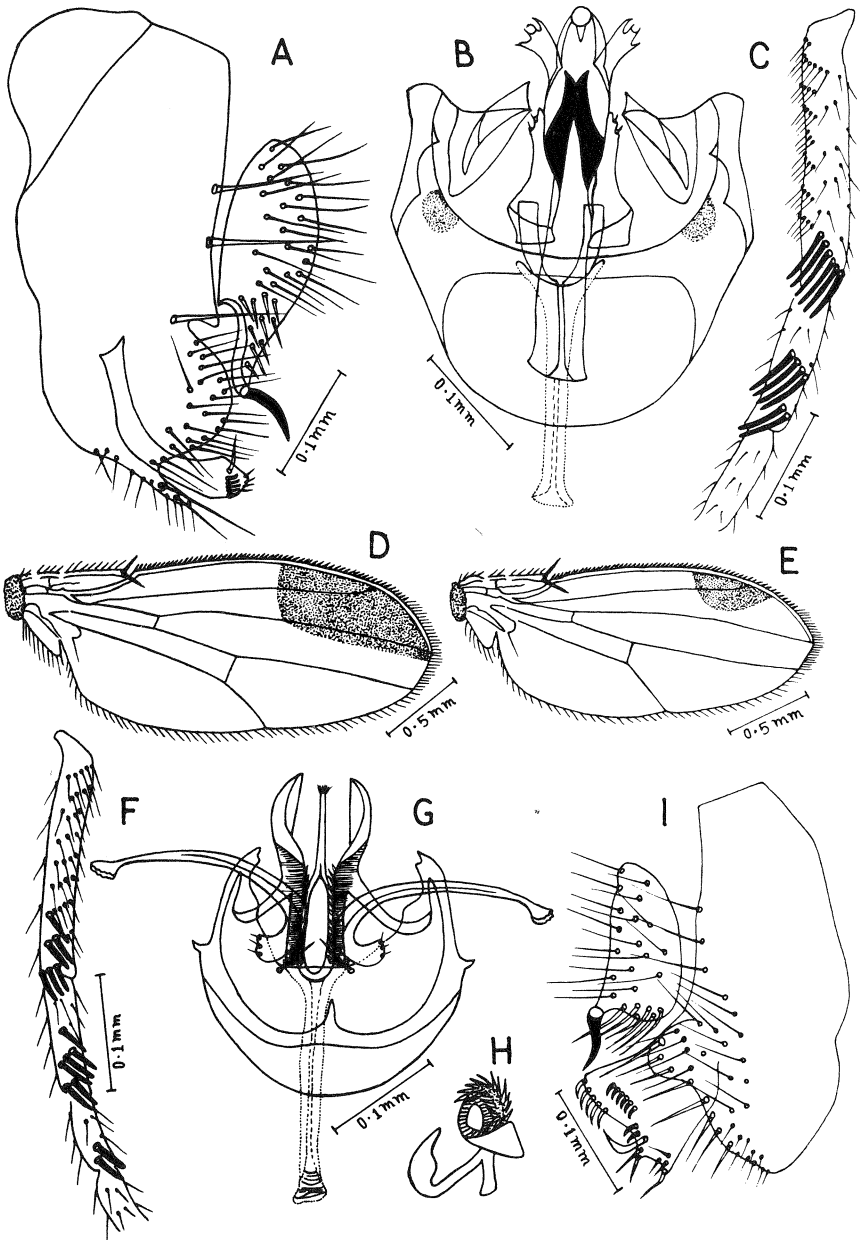


Fig. 3. — A-D, *Drosophila kurseongensis* sp.n.: A, peripheral phallic organs; B, phallic organs; C, male fore leg; D, male wing. E-I, *Drosophila neoelegans* sp.n.: E, male wing; F, male fore leg; G, phallic organs; H, posterior paramere; I, peripheral phallic organs.

Wings with black patch at the apex of second vein (fig. 3E). C-index about 2.45; 4V-index about 2.12-2.48; 4C-index about 1.19; 5X-index about 2.23. Two equal bristles at apex of first costal section; heavy bristles on about basal three-sevenths of third costal section.

Abdominal tergites brown, darker posteriorly in old specimens.

Periphallic organs (fig. 3I): genital arch broad, and with a rounded process covering base of primary clasper. Lower portion of genital arch with numerous bristles, larger along under margin. Primary clasper large, primary teeth in two groups of 6-2, a row of about 5 curved bristles along medial margin of clasper and few similar bristles at lower part of clasper, one of which thicker and directed upward. Anal plate with numerous long bristles dorsally, one large black tooth and few thicker bristles ventrally.

Phallic organs (fig. 3G): aedeagus slender, lower half broad, upper half tubular, hirsute. Anterior parameres very long, curved, expanded and finely serrated at tip, articulated with aedeagus, basal lobe with about 3 sensilla. Posterior parameres large, with numerous finger-like projections medially. Novasternum with a pair of small submedian spines. Ventral fragma hemispherical.

Average length of male body (from 10 males), 2.5 mm; wing, 2.0 mm.

Holotype ♂, INDIA: Kurseong, St. Mary's Hill, Darjeeling district, West Bengal, October 1974 (Gupta & Singh). Paratypes: 16 ♂, same data as holotype. In the Department of Zoology, Banaras Hindu University, Varanasi, India.

*D. neoelegans* appears to be closely related to *D. elegans* Bock & Wheeler in having apical black patch in male wings, sex-comb in transverse rows on first three tarsal segments, but differs from *elegans* in having the anterior parameres expanded and finely serrated at tip, aedeagus with its lower half broad and upper half tubular, primary teeth in two groups of 6-2. (Anterior parameres narrowly pointed and black at tip, aedeagus constricted at mid region and expanded apically, primary teeth in two groups of 2-3 in *elegans*.)

Distribution. — India.

Remarks. — Apparently a sibling species of *D. elegans*.

TABLE 1:— LIST OF DROSOPHILID SPECIES COLLECTED

Name of species	Number
1. <i>Scaptomyza (Parascaptomyza) pallida</i>	2
2. <i>Drosophila (Dorsilopha) busckii</i>	187
3. <i>Drosophila (Drosophila) immigrans</i>	209
4. <i>Drosophila (Drosophila) trisetosa</i>	5
5. <i>Drosophila (Sophophora) tristipennis</i>	14
6. <i>Drosophila (Sophophora) trilutea</i>	1
7. <i>Drosophila (Sophophora) lucipennis</i>	22
8. <i>Drosophila (Sophophora) kurseongensis</i> sp.n.	1
9. <i>Drosophila (Sophophora) neoelegans</i> sp.n.	17
Total	458

#### ACKNOWLEDGMENTS

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Genetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi, India. May 24th, 1975.

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*Blaps mucronata* Latr. (Col., Tenebrionidae) near a modern building. — In view of the recent interest in the present distribution and habitat of *Blaps mucronata* Latr. (Allen, 1971, *Entomologist's mon. Mag.* 107: 192; Nash, 1973, *ibid.* 109: 71), I would like to report the finding of a single specimen under a metal coal-bunker adjacent to a modern house on 28.vii.1974. The house was built about 1955, lacks a cellar and is on a large housing estate of similar houses near Oxford (SP 41). The nearest old buildings are farm buildings about one hundred yards distant and beyond a road and another row of modern houses. Further searches have failed to reveal more specimens. It would appear that this beetle is not restricted to stored products, cellars or churchyards. — A.R. LEECH, Department of Biochemistry, University of Oxford, South Parks Road, Oxford OX1 3QU: August 14th, 1976.

*A second record of the Wood Cricket, Nemobius sylvestris* (Bosc), (Orth., Gryllidae) from South Wiltshire. — On 7th August 1976 I heard several male Wood Crickets singing in mature oak woodland on the southern edge of Bagfield Copse, South Wiltshire (V.C.8). On searching the leaf litter in a small rideside glade I found two adult males of *N. sylvestris*. Bagfield Copse is near Whiteparish Common, the only previously recorded locality in South Wiltshire for *N. sylvestris* (Andrewes, C.H., 1949, *Entomologist's mon. Mag.* 85: 80). The woodland in this area, although at a lower altitude, has many similarities with the adjacent New Forest, where *N. sylvestris* is common. — PAUL T. HARDING, Institute of Terrestrial Ecology, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs., PE17 2LS: August 23rd, 1976.

*Aulonium trisulcum* (Geoffr.) (Col., Colydiidae) in Wales. — On the 11th July, 1976 I removed a small strip of bark from a dying English elm (*Ulmus procera* Salisb.) at Glansein Hotel, Llangadog, Dyfed (grid ref. SN 732 287). Seven beetles were collected from the galleries of bark beetles; three were *Scolytus multistriatus* (Marsh.) and three *S. scolytus* (F.). The seventh proved to be *Aulonium trisulcum* (Geoffr.) which I understand, preys on the larvae and pupae of these scolytid beetles.

The identity of the colydiid beetle was confirmed by Mr. Adrian Amsden, Assistant Keeper of Zoology at the National Museum of Wales, Cardiff, and the specimen has been donated to the collection. The Museum has examples from Oxford, Middlesex and Kent, but this is its first Welsh specimen and there is no record of it from Wales at the Museum. — DAVID DAVIES, Ty'r Ysgol, Rhandirmwyn, Llandoverly, Dyfed: September 19th, 1976.