

reason for the lack of total cell wall hydrolysis is not clear but it might be due to a biologically improbable adaptation or a coevolutionary condition of the yeast and the *Drosophila*.

References: Phaff, H.J. 1971, in *The Yeasts* (eds. A.H. Rose and J.S. Harrison), pp 133-210; \_\_\_\_\_ 1977, in *Food Proteins, Advances in Chemistry Series No. 160* (eds. R.E. Feeney and J.R. Whitaker), pp. 244-282; Shehata, A.M. El Tabey et al. 1951, *Amer. Natur.* 85:381-383; Starmer, W.T. et al. 1976, *Microbial Ecology* 3:11-30; Villa, T.G. et al. 1975, *Arch. Microbiol.* 104:201-206.

Wheeler, M.R. University of Texas, Austin, Texas. Are the new species described in DIS validly published?

A number of new species of *Drosophila* and related genera have been described in DIS, but their validity and recognition in scientific nomenclature has never been clear. To be valid, new names must be "published" in accordance with

the International Code of Zoological Nomenclature, as adopted by the International Congress of Zoology and administered by the International Commission on Zoological Nomenclature (ICZN). The question of whether DIS is a publication has been debated often--see for example DIS 30: 6a, 33:7, 34:164, 36:8. Earlier issues of DIS, up to No. 29 of 1955, carried the front cover statement "This is not a publication." Beginning with No. 30 (1956) the statement was dropped. The current statement, "Material presented here should not be used in publications without the consent of the author", does nothing to help determine whether new names are validly published or not.

The question, then, is not whether the editor(s) of DIS consider it to be a publication, but whether it is a publication in the sense of the Code. To (hopefully) settle this matter, I quote opinions from E.B. Basden of Scotland, who has been very active in *Drosophila* systematics, Curtis Sabrosky of the Systematic Entomology Laboratory, USDA, a well known Dipterist and long-time member of the ICZN, and Richard Melville, permanent Secretary of the ICZN, at the British Museum (N.H.), London.

They are unanimous in their opinions, with which I concur: New taxa described in DIS since 1955 should be considered as having been validly published. Here are a few of their comments:

Basden: "I have always thought that it [DIS] was a publication according to the Rules, p. 7, Art. 8, and I think that it should be accepted as such, in spite of Recommendation 8A [i.e., it is best not to use mimeographing, etc., for a publication - MRW]. It's a regular scientific periodical."

Sabrosky: "...now that I have seen [DIS] I am inclined to agree with Melville that it is indeed a publication... It seems obvious that the editors also realized that when they dropped the statement 'This is not a publication.' And unless DIS is copyrighted, they might as well drop the requirement about getting the author's consent. ...I have no doubt that some of the research notes are mere progress reports, which some journals would not accept. But some notes seem pretty complete in themselves, such as pp. 71-72 in DIS 50, where types and paratypes are specified. One very unfortunate aspect of all this is that taxonomic papers in DIS will probably not be picked up by Zoological Record or Biological Abstracts. And ordinary libraries--museums for example--will not have DIS on their shelves."

Melville: "It seems clear that the production satisfies all the mandatory requirements of Art. 8: (a) it is produced in ink on paper in numerous identical copies--No. 38 was issued in 1100 copies, which far exceeds the edition of many learned journals whose status as publications is not questioned merely because their editions are small; (b) some of the material in it is clearly published for the purpose of permanent, public record in the science; (c) it is obtainable by purchase; (d) it is not reproduced by a forbidden method."

The number of new names is, fortunately, fairly small. Only one appeared before 1956: Nolte and Stoch, DIS 24:90 (1950) described a new *Drosophila* from Africa; it has since been named *D. yakuba* (Burla 1954). Following is a list of the new taxa described in DIS since 1955. I consider them to have been validly published, and I am sending a statement to this effect to Zoological Record.

*Chymomyza pararufithorax* Vaidya and Godbole 1973. DIS 50:71-72  
*Drosophila chamundiensis* Sajjan and Krishnamurthy 1972. DIS 48:56-57  
*Drosophila charmadensis* Gwoda and Krishnamurthy 1972. DIS 48:38  
*Drosophila ezoana* Takada and Okada 1957. DIS 31:164\*

*Drosophila mojavensis* baja Mettler 1961. DIS 38:57-58  
*Drosophila neonasuta* Sajjan and Krishnamurthy 1972. DIS 48:56-57\*  
*Leucophenga neoangusta* Godbole and Vaidya 1977. DIS 52:24  
*Stegana subexcavata* Vaidya and Godbole 1977. DIS 52:55-56  
*Zaprionus paravittiger* Godbole and Vaidya 1972. DIS 48:135-136

\*Starred species were later described again in another journal.

In my opinion, *Drosophila* taxonomists should not publish new species descriptions in DIS--at least until it is formally recognized as a "publication". Further, it is not wise to include new names in articles of a non-taxonomic nature. The Code provides that a new name may be valid if accompanied by a "description"; but a complete, thorough description is not required--the simplest descriptive remark may be enough to validate a new name (e.g., describing the chromosomes, some electrophoretic patterns, etc.). *Drosophila* workers have a rather poor reputation in systematic circles, having used new, unpublished names without regard to the International Code.

Regretfully, the writer is an expert on this subject, having made more than a few of such errors!

Wijsman, E.M. University of Wisconsin, Madison, Wisconsin. The effect of ether on mating behavior in *D. simulans* y w.

In setting up some experiments which involved matings between virgin females and their brothers in *D. simulans* y w, I encountered considerable difficulty with sterility. I decided to test the possibility that the ether that I

was using as an anesthetic was causing this sterility.

I established pair matings using virgin females and their brothers separated by ether, CO<sub>2</sub>, or aspirator (no anesthesia), and placed the vials at 25°C. Two weeks later I scored the vials as fertile or sterile. As can be seen in Table 1, ether had a very strong effect on fertility. The hypothesis that anesthesia had no effect on fertility was tested using a 1-tailed Fisher's exact test. Comparison of ether and no anesthesia gave  $p < 0.000001$ . CO<sub>2</sub> vs. no anesthesia gave  $p = 0.18$ , which is not significant.

Table 1. Number of vials which were either fertile or sterile when parents were exposed to different types of anesthesia.

Anesthesia	Fertile	Sterile
Ether	4	56
CO <sub>2</sub>	18	8
None	21	4

To determine which of the two sexes was sterilized I repeated the experiment using only one sex which had been exposed to ether. When only the male had been anesthetized high sterility resulted. Anesthetized females mated to non-anesthetized males were fertile.

To determine the cause of sterility I dissected the testes to check for motile sperm and watched the males court females. Males were isolated for 3-4 days after collection with either ether or an aspirator and then placed in empty vials with 3 aged virgin females. Those which had been collected without ether showed normal courtship behavior;

those which had been exposed to ether showed virtually no courtship behavior. Dissection of the testes showed motile sperm. Thus in this strain of *D. simulans*, ether seems to produce almost complete, permanent, behavioral sterility in the males.

Williams, J.M. University of California, Santa Cruz, California. Tumorigenesis in *D. melanogaster* bearing the temperature-sensitive mutation *shibire*<sup>ts1</sup>.

The imaginal discs of *Drosophila* are single-layered secretory epithelia (Bodenstein 1950; Poodry and Schneiderman 1970) which resemble the ascinar units of vertebrate exocrine glands. This feature has been exploited along with the convenience of in vivo culturing meth-

ods (Hadorn 1963) to characterize the initial morphological and ultrastructural changes occurring in the eye-antenna imaginal disc of *D. melanogaster*.

A temperature-sensitive mutation, *shibire*<sup>ts1</sup> (Poodry et al. 1973) in *D. melanogaster*