Table 2 *Liver total carbohydrates and glycogen in control and ochratoxin A-administered rats*

Parameter	Control	Ochratoxin A-administered
Total carbohydrates	62.40 ± 7.41	39.22 ± 4.76*
Glycogen	42.15 ± 3.15	20.50 ± 3.90*

Values are expressed as mg g of fresh tissue and are average for six animals in each group.
*Statistical significance, $P < 0.001$.

tion of blood glucose is mainly controlled by the action of insulin and glucose is the best inducer of insulin secretion from the islets of pancreas. The increase in blood glucose level during ochratoxin A toxicosis may be due to the decreased level of insulin, which in turn may be due to inhibited synthesis and/or reduced release of insulin from the pancreatic cells. Induction of hyperglycemia associated with hypoinsulinemia by mycotoxins like terreic acid[11] and penitrem A[12] has been reported. Enhanced blood glucose accompanied by depletion of hepatic glycogen in chicks during ochratoxin A toxicosis has also been noticed[13].

The liver functions as a 'glucostat' and plays a vital role in the maintenance of blood glucose level either by uptake from or by release of glucose into the blood. Ochratoxin A has been reported to cause injury to the liver[14]. It is important to note that though there is a reduction in the level of total carbohydrates in liver tissue during ochratoxin A toxicosis, it is only a reflection of glycogen decrease. The observed decrease in the level of glycogen may be due to the effect of ochratoxin A on glycogen metabolism. Other mycotoxins like aflatoxin[15] and patulin[16] have also been reported to lower hepatic glycogen.

Since ochratoxin A-administered rats exhibited a severe diabetic condition, it may be concluded that ochratoxin A, a major secondary metabolite of *A. ochraceus*, is diabetogenic in nature.

18 August 1988; Revised 3 December 1988

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CHROMOSOMAL STUDIES IN *FULVIA MUTICA* (BIVALVIA: CARDIIDAE) FROM JAPAN

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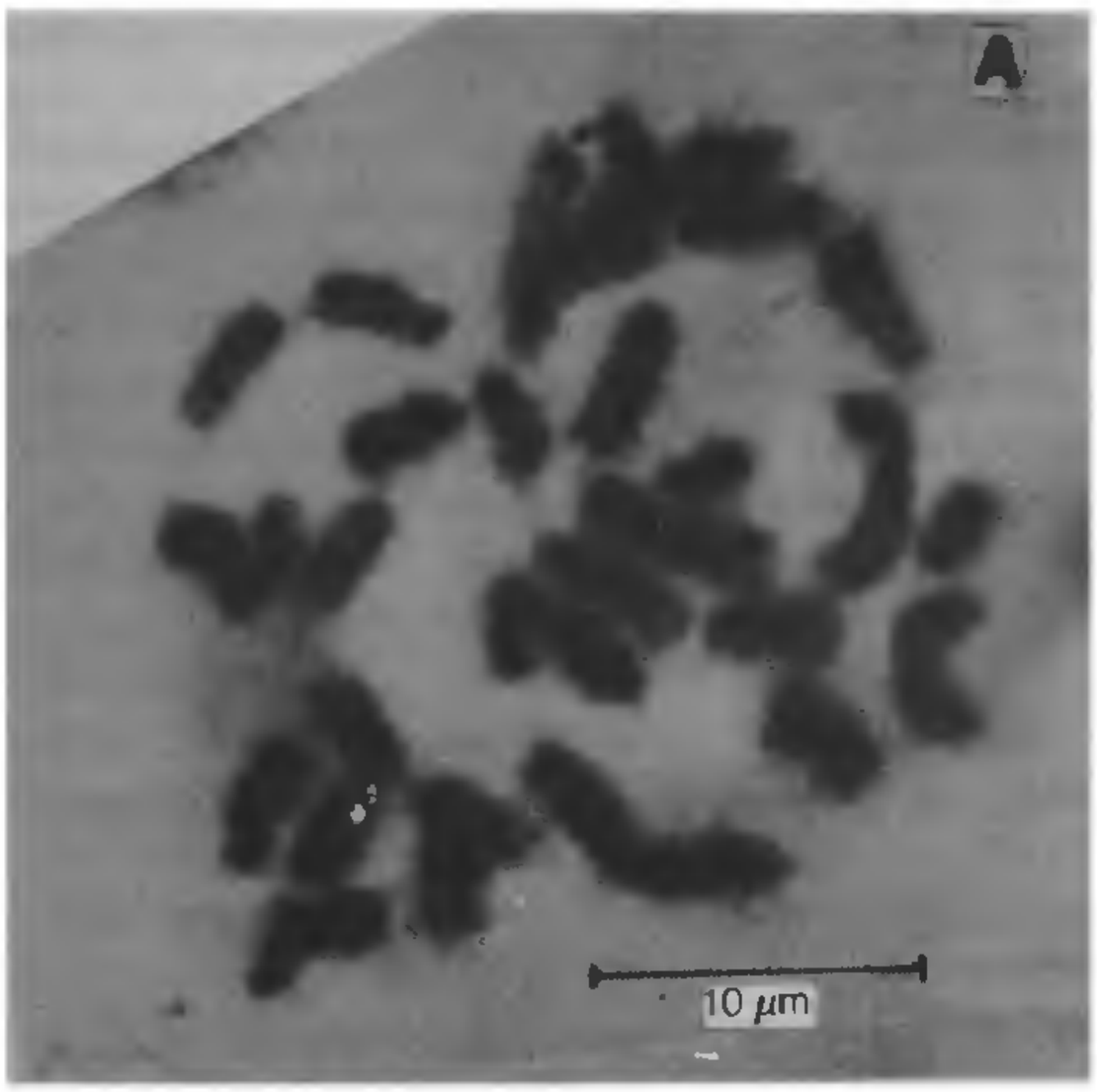
CHROMOSOMAL studies on a large number of molluscs belonging to different families were made earlier[1-4]. Nakamura[2] listed cytogenetic information on 125 species of molluscs using the CISMOCH computerized index system. However, in family Cardiidae only five species were recorded. The present report of chromosome number and karyotype



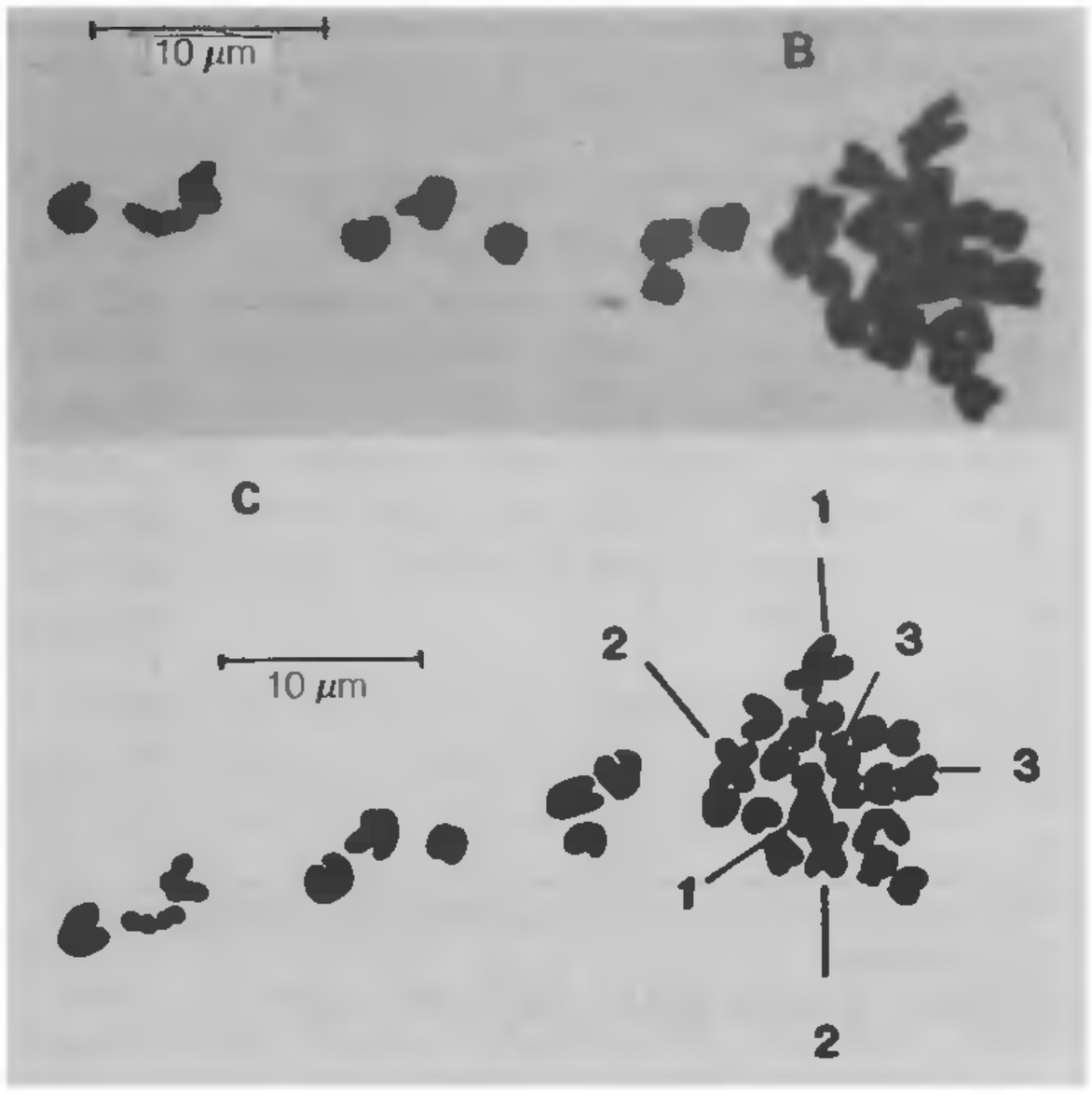


Figure 1A–C. Chromosomes of *Fulvia mutica.* **A,** Late prophase cell showing chromosome number (2*n*) of 30. **B,** Somatic metaphase. **C,** Karyotype.

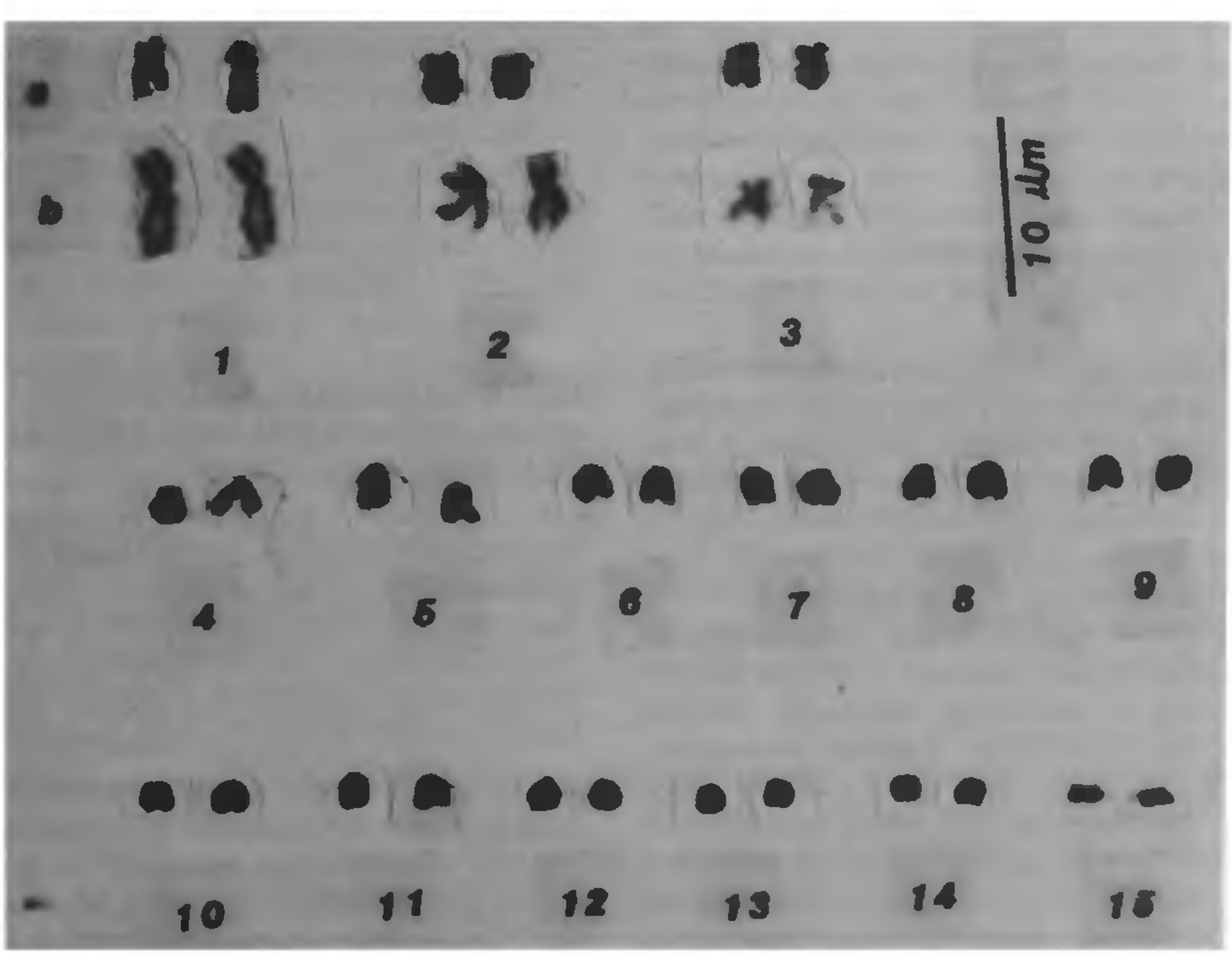


Figure 1D. Karyogram from figure 1A. (The pairs 1–3 were, respectively, submetacentric, metacentric and submetacentric. The pairs in line B from a late prophase cell are included to show clearly the position of the centromere.)

Table 1 *Karyotypic data for Fulvia mutica*

Chromosome pair	Total length (μm) Mean	SD	Arm ratio (L/S) Mean	SD	Chromosome type*
1	4.75	0.82	1.83	0.31	SM
2	3.85	0.93	1.08	0.31	M
3	2.75	0.87	2.03	0.45	SM
4	2.27	0.84	4.50	0.78	ST
5	2.06	0.69	—		T
6	1.96	0.75	—		T
7	1.84	0.52	—		T
8	1.82	0.46	—		T
9	1.80	0.50	—		T
10	1.75	0.25	—		T
11	1.72	0.31	—		T
12	1.64	0.29	—		T
13	1.58	0.25	—		T
14	1.52	0.45	—		T
15	1.20	0.35	—		T

*SM, Submetacentric; M, metacentric; ST, subtelocentric; T, telocentric.
Karyotype formula: 4 SM + 2 M + 2 ST + 22 T.

of *Fulvia mutica* Reeve (1844) is a new addition to the existing data on the family.

Thirty specimens of 6-month-old *F. mutica*, reared at Kyoto Prefecture Fisheries Station, Japan, were collected in April 1988, and chromosomal studies were carried out in gill tissue cells. The gills were dissected, treated with 0.04% colchicine (30 min), and fixed in Carnoy's (3:1). Slides were prepared by the air-drying technique and stained with Giemsa stain.

The chromosome number ($2n$) was found to be 30, as shown in figure 1A–D. The karyotypic data were obtained from ten metaphase plates (table 1). The somatic diploid complement comprises 4 submetacentric, 2 metacentric, 2 subtelocentric and 22 telocentric chromosomes (figure 1D). The chromosome size varies between 1.20 and 4.75 μm.

Among the five species of the family Cardiidae studied earlier, diploid numbers of 38, 38 and 24 were recorded in *Mercenaria mercenaria*, *M. campechiensis* and *Dinocardium robustum* respectively, and $n=20$ in *Cardium edule* and *Cardium tuberculum*[1–3]. The results of the present investigations on *F. mutica* ($2n=30$) suggest that the species in the family Cardiidae have a wide range of chromosome number. Nakamura[2] found that more than half of the diploid complements of bivalves were usually metacentric and submetacentric, except in family Mytilidae, Pectinidae and Terenidae. The present information on *Fulvia mutica* (Cardiidae) shows dominance of telocentric chromosomes in the diploid complement.

The author is grateful to the Director, National Research Institute of Aquaculture, Japan, for laboratory facilities, to MIF, Tokyo, for grant of funds, and to CSIR, New Delhi, and NIO, Goa, India, for leave. Thanks are due to Dr K. T. Wada, Mr A. Komaru and Mr Iwao for arranging supply of material and for help.

31 October 1988

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RAPID DETECTION OF AFLATOXIN BY PRESSURE MINI-COLUMN TECHNIQUE: A COLLABORATIVE TRIAL

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AFLATOXINS are toxic secondary metabolites elaborated primarily by *Aspergillus flavus* and *A. parasiticus*. They are commonly found to contaminate diverse agricultural commodities consumed by man, thus posing a potential health hazard[1,2]. An outbreak of acute toxic hepatitis in India, due to consumption of maize heavily contaminated with *A. flavus*, was reported from tribal areas in Rajas-