The specimen was brought to the Department of Zoology from nearby locality of Bhopal. Two complete tails, identical in structure, are attached to the base of mesosoma (Figs. 1 and 2). There could not be found any significant difference between the two tails except the tail of the left side is slightly thicker than that of the right side. The segments of the right tail are dorsally concave and ventrally convex with longitudinal ridges and its ventral side is somewhat concave. Correspondingly the right sting is pointed upwards and left downwards.

On careful examination of the specimen, there could not be found any other abnormality, except the twin tails. The morphological details of the specimen remain the same as that of a mature normal scorpion.

KARYOTYPE OF THE SANDFLY PHLEBOTOMUS PAPATASI

Sandflies form an important group of vectors of many human diseases. Over 500 species of sandflies of the family Phlebotomidae are known from various parts of the world. Though there are many reports of the studies on ecology, general biology and vector potentiality of sandflies, very little is known about their cytology. In fact, the only published report on this subject is that of the karyotype of *Phlebotomus longipalpis* (*Lutzomyia longipalpis*). The present communication reports the karyotype of another species of sandfly *Phlebotomus papatasi*.

Fully grown 4th instar larvae from the laboratory colony of *P. papatasi* were used for chromosome preparations. They were immersed in 0.1% colchicine solution for about 4 hours. Following colchicine treatment, the head of the larva was separated from the rest of the body and stained for 10 minutes in lacto-aceto-orcein stain (85% lactic acid, 50 ml; acetic acid glacial, 50 ml; orcein, 2 gm). The whole head after staining, was squashed in 45% acetic acid on a slide. The brain tissue could thus be easily seen. The edges of the coverslip were sealed with nail-polish and the preparations were studied under microscope. A total of 35 larvae were processed, 23 individually and the rest in batches of 2–3. Metaphase plates were obtained from 6 out of 23 larvae processed individually, in addition to those observed from larvae processed in batches.

The karyotype of *P. papatasi* consists of 4 pairs of chromosomes (2n = 8) (Figs. 1–2). The chromosomes are numbered from I to IV according to the system followed in case of mosquitoes. The shortest chromosome is designated as chromosome I, the longest as IV and the intermediate ones as II and III. Of these, chromosome I is acrocentric, chromosomes II and III submetacentric, and chromosome IV metacentric. The relative length of different chromosomes and their arms, from one of the metaphase plates, are as follows: chromosome I—2.8 μm, chromosome II—5.6 μm (3.6 + 2.0 μm), chromosome III—7.0 μm (4.5 + 2.5 μm) and chromosome IV—7.6 μm (3.8 + 3.8 μm). Sexual dimorphism in karyotype could not be detected in any of the metaphase plates studied.

Carvalho, for the first time, the karyotype of the sandfly *P. longipalpis*, which also had 4 pairs of chromosomes. Of these, one was acrocentric (chromosome I) and the remaining three were metacentric (chromosomes II, III and IV) pairs. Whereas, in *P. papatasi*, as it has been observed during the present study, there is one
acrocentric pair (chromosome I) and one meta-
centric pair (chromosome IV) and the other two
submeta-centric pairs (chromosomes II and III).
It is thus evident that the karyotypes of these two
species of sandflies, one from the new world
(P. lonesulpis) and the other from the old world
(P. papatasi) differ considerably.

KARYOTYPES OF THREE SPECIES OF
MOSQUITOES FROM INDIA

CYTogenetics of mosquitoes has received much
attention in recent years in an attempt to under-
stand the genetic basis of insecticide resistance and
genetic control. Even though more than 2400 species
of mosquitoes are known to science so far, various
cytogenetic studies have been conducted on less than
1005. Kitzmiller2 emphasized the need for stan-
dardized karyotype studies in additional species
of mosquitoes to obtain data on heterosomes and
relative arm length of mitotic chromosomes. The
purpose of this communication is to report the
different karyotypes of three species of mosquitoes from
India, viz., Aedes (Stegomyia) novalbopicus
Barraud, Aedes (Stegomyia) subalbopicus Barraud
and Toxorhynchites splendens (Wiedemann).

Brain tissues from the 4th instar larvae were
employed to study the somatic chromosomes. Larvae
of A. novalbopicus and A. subalbopicus were from
approximately 35 and 5 laboratory generations
respectively, whereas larvae of T. splendens were
collected from the field (Khandala, Maharashtra
State) and were reared in the laboratory up to
4th instar. The techniques employed for chro-
mosome preparations were essentially the same as
described by French et al.5 From each species
25–30 individual larval brain preparations were
studied. For chromosome measurements the
procedure used by Rai6, was followed. They were
numbered according to McDonald and Rai7.

The diploid chromosome number was 6 in all
3 species (Figs. 1–3). Typical of mosquitoes,
chromosome arrangements were arranged in 3 pairs. Occasionally
(0–1–0.2% of the dividing cells) cells with poly-
loid chromosomes were also observed in all the
3 species. Somatic pairing of homologous chro-
omosomes was frequent and was intimate at the
centromere region. Sexual dimorphism in the
chromosome complement was not detected in any
of the species studied. The measurements of
metaphase chromosomes and the ratio of the length
of chromosome I to chromosomes II and III are
given in Table.

All the chromosomes from 3 species of mosquitoes
were metacentric. The ratio of length of chro-
mosome I to chromosomes II and III in A. novalbo-
picus and A. subalbopicus was comparable to that
of the other members of the genus Aedes thus far
studied6 8. The ratio obtained for T. splendens
was closer to that of members of the genus Aedes
than to members of the genera Culex and Anopheles.
Both in A. novalbopicus and A. subalbopicus there
was a considerable difference in length between
chromosomes II and III (6–7% of the total length