of chromosome 8. Thus the modal karyotype was 46,XY,t(2;8)(p12;q24) as shown in the figure. Cultured cells were karyotyped on 3 separate occasions at 2, 3 and 4 months after culture initiation. The cell line maintained the pseudodiploid karyotype and all 21 quinacrine-banded metaphases showed the same 2;8 translocation. No other structural abnormalities were observed.

The present Japanese Burkitt's lymphoma displayed a hitherto undescribed $2p^-;8q^+$ translocation but not the $8q^-;14q^+$ translocation previously demonstrated in African and North American Burkitt's lymphomas[2-5]. It is of interest to note that the long arm of chromosome 8 is involved in both of these translocations. Our findings suggest that the long arm of chromosome 8 may also play an important role in the development of lymphoid neoplasia.

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Somatic chromosomes of Indian burrowing toad, *Uperodon globulosum* (Gunther) (Anura; Amphibia)[1]

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Summary. Somatic chromosome complements of the Indian burrowing toad, *Uperodon globulosum*, have been described for the first time. The 2n number is 26 (NF = 52) in both the sexes. No heteromorphism in relation to sex chromosome pair has been recorded. Deviations from 2n number (2n = 10–28) have been noticed in the cells of different specimens. The result has been compared with *U. systoma*.

Very little has been added to the cytology of Indian amphibia after the pioneering work of Seshachar[2], Natarajan[3], Sharma[4] and Manna[5]. Recently, we have undertaken a cytological survey of Indian amphibians. The present communication is a preliminary report on the somatic chromosomes of *Uperodon globulosum* (Microhylidae, Anura).

8 male and 2 female specimens (weighing about 50–70 g) were collected from local ponds and ditches after a heavy shower in the months of June and July. Males were somewhat easily identifiable by their characteristic mating call; females were either rare or else difficult to identify (the only 2 specimens studied were captured when they were approaching their mates). Chromosomes from these specimens were prepared from spleen, liver, bone marrow and intestine by a slight modification of the technique described earlier[6,7]. 1 variation being that 0.1% colchicine was injected 42 h before the specimens were sacrificed for tissue collection.

Liver and spleen were good sources of cells in metaphase. An analysis of 20 metaphase complements from each specimen revealed 26 (NF = 52) as the diploid number in both the sexes. All the chromosomes have median or submedian centromeres excepting pair number 10 which is subtelocentric (figure 1). However, occasional deviations from the diploid number (2n = 10–28) were encountered not only in different tissues of the same individual but also in different cells of the same tissue (figure 2, a and b). Chromosome pair No. 7 is characterized by the presence of a prominent secondary constriction in both the long arms (figures 1 and 2). However, in most metaphases only 1 of

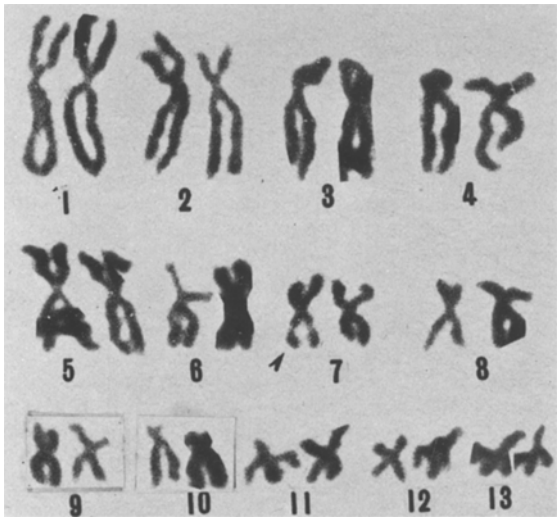

Fig. 1. Karyotype of male *Uperodon globulosum*. Arrow indicates chromosome with secondary constriction.

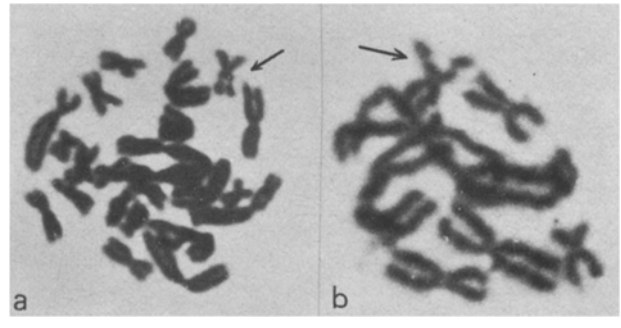

Fig. 2. Somatic metaphases from spleen (a) and liver (b) of *Uperodon globulosum* with hypodiploid chromosome complements. *a* With 24 chromosomes and *b* with 10 chromosomes. Arrow indicates chromosomes with secondary constrictions.

the 2 homologues of pair 7 exhibited this distinctive feature, giving the appearance of a heteromorphic pair which may be confused with a sex chromosome pair. No clear heteromorphism in relation to sex chromosome pair has been noticed in either of the 2 sexes. In some cases the 8th pair was found to be slightly heteromorphic but it was not of universal occurrence. The arm ratio and relative percentage length are given in the table.

Uperodon globulosum belongs to the family Microhylidae which is considered as one of the most problematic families in amphibia[8,9]. So far as the present author is aware, only 1 more species belonging to genus *Uperodon (Cacopus)* has been studied cytologically. In his report on the chromosomes of *Cacopus systoma,* Natarajan[3] suggested 26 as 2n number in this species with NF value 50. This seems interesting when compared with *U. globulosum,* because 2n=26 with NF value 50 indicate the presence of a telocentric chromosome in the karyotype which seems to be very uncommon for the family Microhylidae[9]. In the karyotype of *U. globulosum,* no such telocentric pair has been noticed; but in certain cells the chromosome pair No. 10 showed the presence of 2 inconspicuous short arms giving the appearance of a telocentric element.

Spontaneous deviations from 2n number have been noticed in the present study (figure 2). Previously Sharma et al.[4], Yadav[10] and Chakrabarti[11] also reported the occurrence of subdiploid number in the somatic cells of different animals. Thus the fallacy of earlier speculations[5,12] that the hypodiploidy at mitotic level may be attributed to faulty techniques of squashing, etc., has been borne out by the present investigation.

Measurement of chromosomes of *U. globulosum* (SA, short arm; LA, long arm)

Arm ratio (index: SA/LA × 100)	Pair No.	Relative % length (as per 2n set)
69.23	1	65.28
68.00	2	62.30
59.09	3	53.40
52.17	4	51.92
61.90	5	50.44
78.57	6	37.09
90.90	7	31.15
75.00	8	31.15
90.90	9	31.15
41.66	10	25.22
87.50	11	22.25
75.00	12	20.77
71.42	13	17.80

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Absence of dopamine sensitive adenylate cyclase in the A10 region, the origin of mesolimbic dopamine neurones

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Summary. Dopamine (DA) failed to stimulate the adenylate cyclase of the mesolimbic A10 DA nerve cell body area, in contrast to its activating effect in the nigrostriatal A9 DA cell body area. The enzyme was stimulated by GMPPNP (a GTP analog) and NaF. This indicates the absence in the A10 cell area of DA receptors with functional coupling on adenylate cyclase, in contrast to the A9 cell area where such DA receptors are believed to be located on afferent axon terminals.

2 of the major dopamine (DA) neurone systems in rat brain are the nigrostriatal A9 and the mesolimbic A10 systems[2]. The A9 cell body-dendritic area, the substantia nigra, contains a DA-sensitive adenylate cyclase (EC 4.6.1.1.)[3,4]. This indicates the presence of DA receptors, since some DA receptors of nervous tissue are intimately associated with a DA-sensitive adenylate cyclase[5,6]. The adenylate cyclase-linked DA receptors of the substantia nigra appear to be located on striato- and/or pallidonigral axon terminals[7-9]. It has been reported that nigral A9 dendrites can release DA which interacts with these receptors[10,11]. The striato- and pallidostriatonigral axons, thought to be part of feedback systems which control nigral neurones, use substance P and γ-aminobutyric acid (GABA) respectively as transmitters[12,13].

We have studied the possible existence of a similar synaptic organization, involving DA receptors on feedback axons, in the cell body area of the mesolimbic A10 DA system, namely the ventral tegmental area of Tsai (VTA)[2,14]. The VTA was investigated for the presence of a DA-sensitive adenylate cyclase. Morphological and neurochemical studies have shown that at least 1 of the mesolimbic DA terminal regions, the nucleus accumbens, projects to the VTA among other regions[14,15]. In addition, the existence of a descending inhibitory system from the nucleus accumbens to the VTA is indicated by recent neurophysiological experiments[16]. The accumbal-VTA neurones do not contain substance P, but might contain GABA[15,16].

Materials and methods. Male outbred SPF rats (Füllinsdorf Albino stock) weighing 140–180 g were used. The A10 cell body area VTA was punched out with a stainless steel cannula (internal diameter 0.75 mm) from 250-µm-thick frontal brain sections according to a microdissection method[17], using the atlas of Palkovits and Jacobowitz[18].

For 5 samples, 3 sections from each of 30 rat brains were prepared and 3 (for sample 1) and 2 (for samples 2–5)