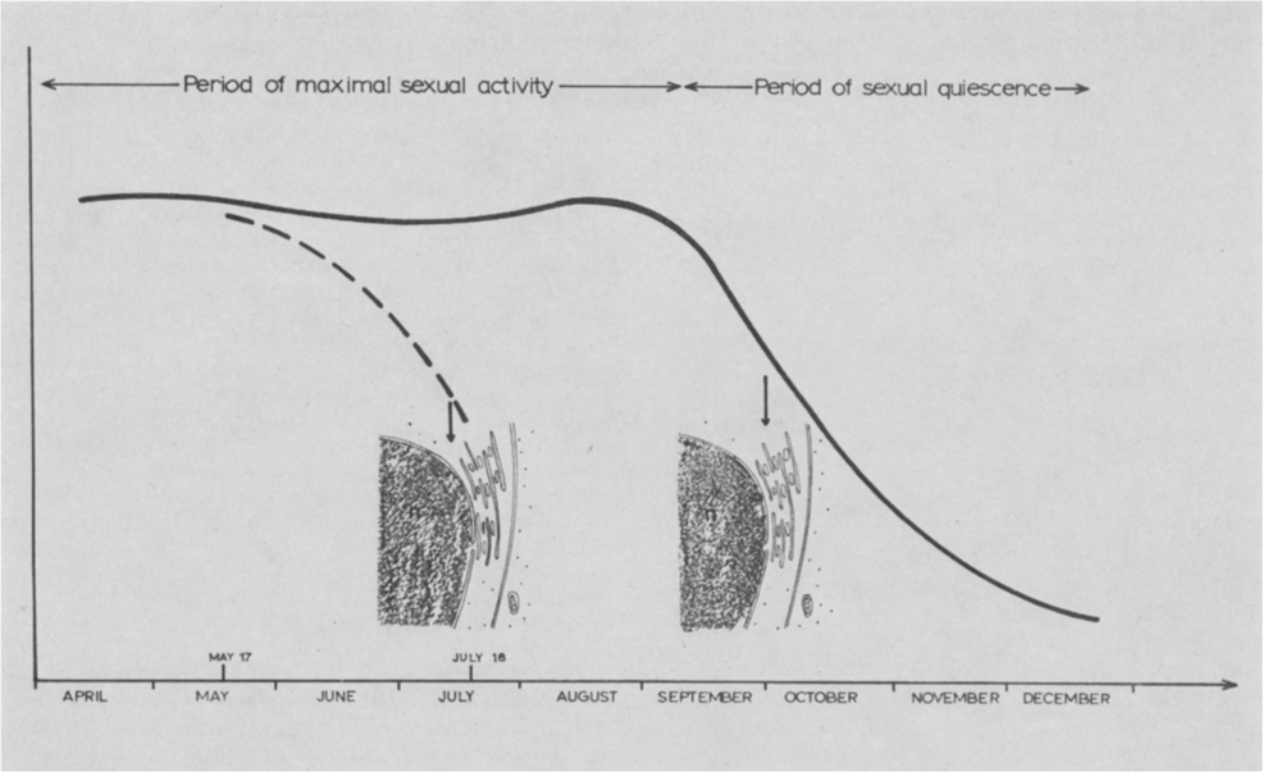

Fig. 3. Diagram of the course of normal sexual activity (drawn line) in the adult male hedgehog as determined by determination of gonad and secondary sex gland weight and the presence of chemical compounds[13–15]. The hatched line indicates the experimental decline of sexual activity caused by serotonin administration. This is related to the appearance of the reticular formations in the pinealocytes described and figured. This same relationship has been observed during the normal course of sexual activity at the period during which this activity starts its decline.

formation described has been observed in the present investigation. These formations are also present during one part of the period of natural decline of sexual activity (end of September – first part of October, Figure 3).

The present experiment confirms the existence of a relationship between the decrease of sexual activity and the appearance of the peculiar reticular formation described in male hedgehog pinealocytes. It is, however, not possible to decide whether the decrease of sexual activity functionally induces the appearance of this reticular system or vice-versa.

It will, moreover, be necessary to determine the exact way in which serotonin exerts this effect and the contents of the vesicles present between the lamellae. A study of the presence of serotonin in the hedgehog pineal gland during the different parts of the sexual cycle by means of the histochemical fluorescence technique is now in progress.

Résumé. Les injections quotidiennes de sérotonine à des hérissons mâles pendant la phase de pleine activité sexuelle provoquent, au niveau des pinéalocytes, l'apparition d'un système réticulaire particulier. Ce système est composé de plusieurs cavités réticulaires rectilignes mêlées à de nombreuses vésicules. Un système réticulaire semblable avait déjà été observé chez le hérisson au début de la phase du repos sexuel.

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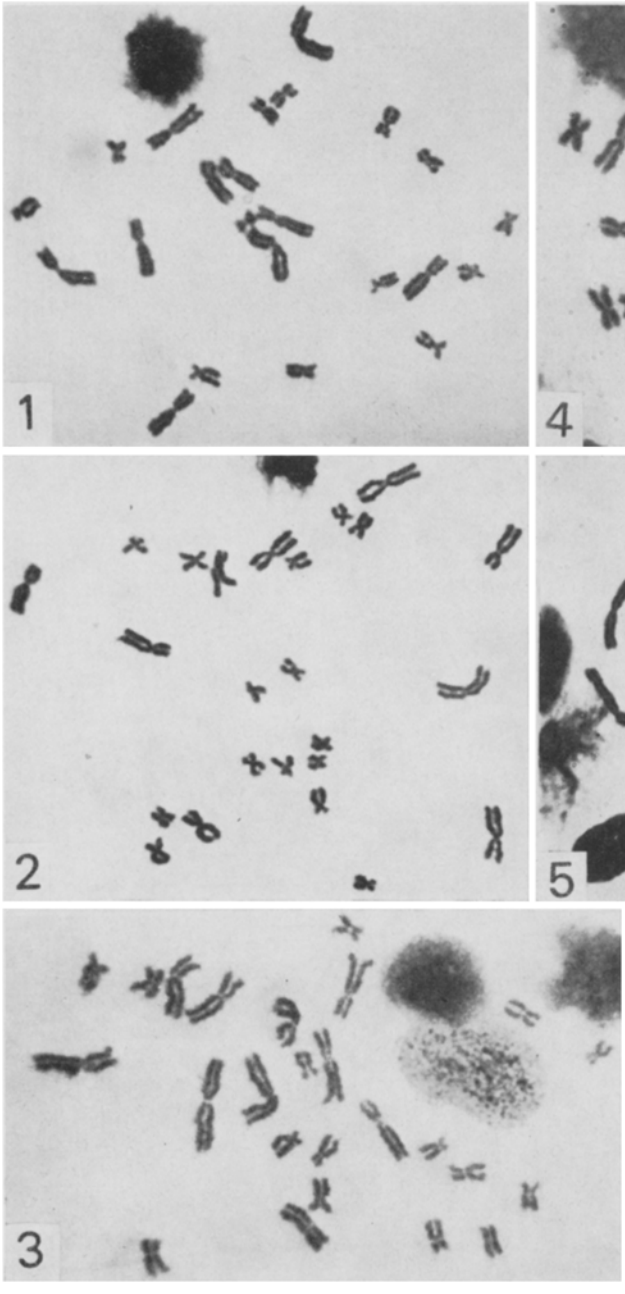
Spontaneous Occurrence of Aneuploidy in Somatic Cells of *Rana tigrina* (Ranidae: Anura)

The diploid chromosome complement in the male and female karyotypes is fairly well established. Occasional deviations from it, however, are also on record in various animal types[1–7]. The accumulation of more cytological data and the application of improved techniques are casting doubt upon the concept of diploid karyotype constancy. The present communication, a preliminary report of the investigations being carried out on the



Figs. 1–5. Somatic complements of *Rana tigrina* with different counts. 1. Mitotic plate with 23 chromosomes ($2n-3$). 2. Mitotic plate with 24 chromosomes ($2n-2$). 3. Mitotic plate with 25 chromosomes ($2n-1$). 4. Mitotic plate with 26 chromosomes ($2n$). 5. Mitotic plate with 27 chromosomes ($2n+s$).

karyotype variation in anurans, reports the occurrence of aneuploidy in male somatic cells of *Rana tigrina* (Ranidae: Anura: Amphibia). The material was collected from Chandigarh (India). After giving Colchicine injections (0.10%) i.p., the spleen was pretreated with hypotonic sodium citrate solution and fixed in 1:3 acetic alcohol. The usual air-drying technique was adopted in preparing the slides, which were stained in Carbol Fuchsin[8].

In *Rana tigrina*, the normal karyotype is composed of 26 chromosomes[9]. Apart from the cells with normal diploid chromosome complement, a fairly large number of cells with different chromosome counts were observed (Figures 1–5). The variation ranges from 23 to 29 (Table 1). In a number of cells with 27 chromosomes, the extra element is very small (Figure 5) and could be a supernumerary like those reported in congeneric species *Rana temporaria*[10]. In other cases, however, the extra chromosomes do not differ in size and shape from the chromosomes of a normal complement.

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Somatic chromosome number in the mitotic plates of *Rana tigrina*

Chromosome number	23	24	25	26	26 + s	27	28	29	Total number of cells
Number of cells	5	6	5	35	10	7	1	1	70

While a large number of aneuploid configurations were observed, regular polyploids e.g. triploids, tetraploids etc., have not been encountered so far. The falacy of earlier speculations that the sub-diploid number at mitotic level may be attributed to faulty techniques of squashing[2,5] etc. has been borne out by the present application of the most advanced technique. As such in all probability, the variation is real and might have originated owing to repeated non-disjunction involving varying numbers of chromosomes at the mitotic level resulting in aneuploidy. The variability, however, can be expressed as $2n - 3$, $2n - 2$, $2n - 1$, $2n$, $2n$ + s, $2n + 1$, $2n + 2$ and $2n + 3$.

To sum sup, there does not seem to be an absolute constancy of karyotype for the species under present investigation, in as much as occasional deviations from the standard diploid chromosome complement are not very uncommon. Such variation seemingly provides raw material for the evolution of karyotype, and the repeated non-disjunction followed by random anaphase movement of the chromosomes may lead to the formation of different cell lineages, which may ultimately lead to the establishment of different karyotypes within a family.

The investigations are still in progress and analysis of complete data from somatic and germ cells of male and female frogs will be published elsewhere.

Zusammenfassung. Es wurde Aneuploidie bis zu drei Chromosomen in den männlichen Körperzellen von *Rana tigrina* (Ranidae: Anura: Amphibia) beobachtet. Die Variationen betreffen: $2n - 3$, $2n - 2$, $2n - 1$, $2n$, $2n + 1$, $2n + 2$ und $2n + 3$.

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Nuclear Bodies in Endothelial Cells of Human Glomeruli

Nuclear bodies have been observed in cells from a variety of normal and abnormal tissues and species[1-3], and classifications into different morphological types have been proposed[3,4]. Their significance is still obscure, although some factors affecting their incidence have been detected[4]. In the course of an ultrastructural study of the renal tissue from a patient suffering from Alport's syndrome, nuclear bodies were frequently observed in the endothelial cells of glomerular capillaries.

Material and methods. Renal tissue was obtained by transcutaneous needle biopsy from a patient in which Alport's syndrome had been diagnosed. Small fragments of the bioptic material were immediately fixed in 1% buffered osmium tetroxide, dehydrated in alcohol and embedded in Epon. Thin sections were cut on a LKB Ultrotome, stained with lead hydroxide and observed in a Philips EM 300 electron microscope.

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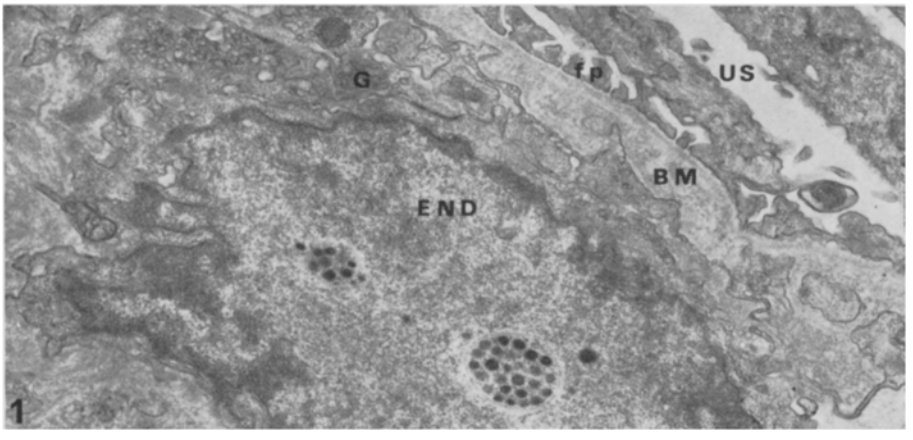

Fig. 1. The nucleus of an endothelial cell (END) contains 2 nuclear bodies. BM, glomerular basement membrane; fp, foot processes; US, urinary space; G, Golgi apparatus. ×16,000.