

duration of the total generation time or G_T was 18.8 h on an average.

The findings concerning the length of G_2 are confirmed by experiments of continuous labelling. In a series of cultures, labelled for 3, 4, 5, 6, 7, 8, 9 h, set up for the study of the replication patterns of the heterochromatin, the first labelled metaphases were found in the 7–8 h samples.

In a previous experiment of pulse labelling on short-term cultures of embryonic cells of *Drosophila melanogaster*, a similar duration of the G_2 period of 7 h was determined (DOLFINI and TIEPOLO²). The length of S and G_2 appeared to be rather constant in each of the present experiments while those of G_1 showed a higher variability. This finding agrees with the general observations of DEFENDI and MANSON⁵, of TERASIMA and TOLMACH⁶ and of SISKEN and MORASCA⁷ on mammalian cells. According to these authors, not only does the average duration of G_1 vary considerably from one cell type to another, but also this is the phase in which most of the variation between individual cells occurs within the same cell population and which is affected to a greater extent by physiological and/or environmental factors.

It is interesting to point out that, in spite of the very specific conditions of culture of these insect cells, particularly the relatively low temperature (26°C), the duration of the total cell cycle and of its different phases

is approximately within the same range of those obtained in mammalian cell cultures (CLEAVER^{8,9}).

Riassunto. La durata media delle fasi del ciclo cellulare (G_1 , S e G_2) e del tempo di generazione totale (G_T) in una linea stabilizzata di cellule di *Drosophila melanogaster* risulta essere rispettivamente di 1.8, 10.0, 7.2 e 18.8 ore.

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⁵ V. DEFENDI and L. A. MANSON, *Nature* 198, 359 (1963).

⁶ T. TERASIMA and L. J. TOLMACH, *Expl. Cell Res.* 30, 344 (1963).

⁷ J. E. SISKEN and L. MORASCA, *J. Cell Biol.* 25, 179 (1965).

⁸ J. E. CLEAVER, *Thymidine Metabolism and Cell Kinetics* (North Holland Research Monographs, Amsterdam 1967), vol. 6, p. 126.

⁹ We are grateful to Profs. C. BARIGOZZI, G. ECHALIER and M. FRACCARO for helpful discussion and critical review of the manuscript.

Some New Data on the Number of Chromosomes of Teleost Fish Obtained by Means of Tissue Culture in vitro

In a previous note in this journal¹ some of us referred to preliminary research made by means of tissue culture in vitro on the somatic chromosomes of some species of teleost fish. This research has recently been developed in our laboratory and the chromosome number of somatic

cells of other species of fish has been accurately determined by the same method. The species studied belong to different families and for almost all of them no caryological data were available in the literature. A list of the species studied with their chromosome number is presented here (Table). A detailed morphological description of their karyotype is in preparation and will be sent for publication shortly.

Numbers of chromosomes of some teleost fishes

Taxa	2n
Centrarchidae	
<i>Lepomis gibbosus</i> (Linnaeus, 1758)	46
Characidae	
<i>Hemigrammus caudovittatus</i> (E. Ahl, 1923)	50
Cyprinidae	
<i>Danio devario</i> (Hamilton-Buchanan, 1822)	50
<i>Danio malabaricus</i> (Jerdon, 1849)	50
<i>Brachydanio rerio</i> (Hamilton-Buchanan, 1822)	50
<i>Brachydanio albolineatus</i> (Blyth, 1860)	50
<i>Leuciscus souffia muticellus</i> (Bonaparte, 1837)	50
<i>Leuciscus aulatus</i> (Bonaparte, 1837)	50
<i>Leuciscus cephalus</i> (Linnaeus, 1758)	50
<i>Alburnus albidus alborella</i> (De Filippi, 1844)	50

Riassunto. In questa nota vengono riportati nuovi dati sul numero dei cromosomi di alcune specie di pesci teleostei.

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¹ B. CHIARELLI, O. FERRANTELLI and C. CUCCHI, *Experientia* 25, 429 (1969).

Aneuploids in Pearl Millet

The classical work of BLAKESLEE and coworkers on *Datura*, that a change in the relative proportions of a group of genes due to variations in chromosome number had an effect on the phenotype, evoked interest of plant geneticists to build up stocks carrying an extra chro-

mosome (Trisomics). In wheat, barley, maize, rye, tomato and peas, such stocks have been developed and found useful for establishing linkage groups¹. Pearl millet, *Pennisetum typhoides* (Burm.) S. & H. ($2n = 14$), an important grain and forage crop in Asia and Africa and

Frequency of aneuploids

Origin	No. of plants studied	Aneuploids $2n+1$	$2n+1+1$	$2n+1+1+1$	$2n+2$
Triploid (selfed)	30	10	0	0	0
Diploid \times triploid	176	5	0	0	0
Triploid \times diploid	85	22	0	0	0
Triploid (Open pollinated)	273	125	4	2	1

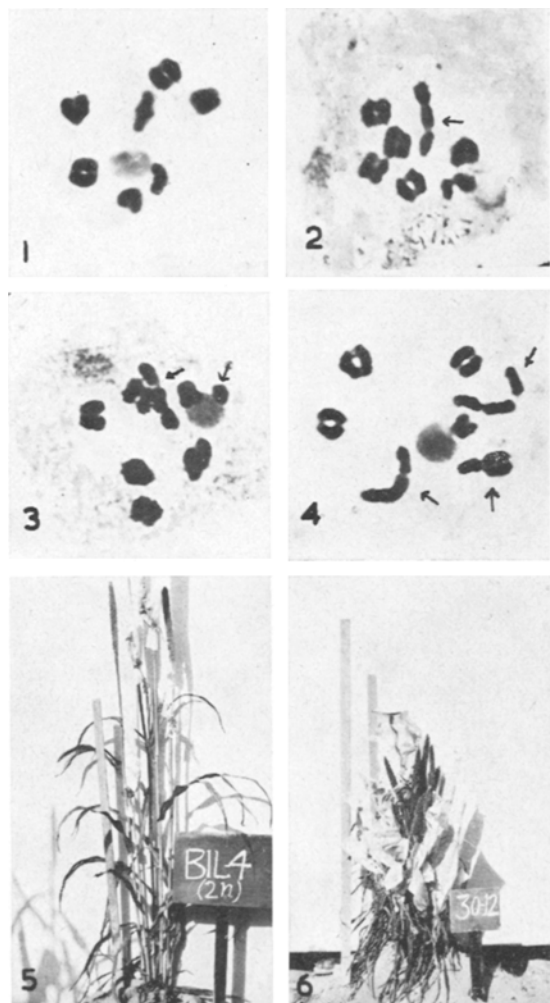


Fig. 1-4. Meiotic chromosomes of diploid and aneuploids at diakinesis stage.

Fig. 1. Diploid inbred BIL-4 (7II).

Fig. 2. Simple trisomic (1III + 6II).

Fig. 3. Double trisomic (2III + 5II).

Fig. 4. Triple trisomic (3III + 4II).

Fig. 5. A plant of diploid inbred BIL-4.

Fig. 6. A trisomic plant.

forage crop in South-east United States, has remained neglected for cytogenetic studies². The present communication reports the production of a number of aneuploids in this crop.

Tetraploidy in BIL-4 an inbred of pearl millet was induced by the use of colchicine³. From the tetraploid-diploid crosses, plants with triploid number of chromosomes were obtained. These plants were selfed and also crossed with the diploid parent. The pollen mother cells from their progenies were analyzed for chromosome number. The origin and the frequency of trisomics and other aneuploids obtained is given in the Table.

Out of a total of 169 aneuploids, 96% were trisomics ($2n+1$, Figure 2) and the remaining were double trisomics ($2n+1+1$, Figure 3), triple trisomics ($2n+1+1+1$, Figure 4) and tetrasomics ($2n+2$). A high percentage of aneuploids was obtained from the progeny of the openpollinated triploid plants grown amongst diploid population comprised of diverse genetic stocks. No plant with less than the diploid number of chromosomes was found.

The trisomics, in general, were shorter in height and possessed narrow leaves (Figure 6). Seed has been obtained from most of the trisomic plants. On the basis of chromosome and plant morphology, all the seven possible types of trisomics have been obtained. These trisomic stocks will facilitate work on establishing linkage groups.

Zusammenfassung. Es wurden von der Nachkommenschaft triploider Perlhirse *Pennisetum typhoides* ($2n=14$) aneuploide, das heisst einfach-trisome, zweifach-, dreifach- und tetrasome Pflanzen isoliert.

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¹ C. R. BURNHAM, *Discussions in Cytogenetics* (Burgess, Minneapolis 1962).

² H. L. CARNAHAN and HELEN D. HILL, *Bot. Rev.* 27, 1 (1961).

³ B. S. GILL, H. S. SRAON and J. L. MINOCHA, *J. Res. P.A.U., Ludhiana* 3, 260 (1966).

Repression phagique de l'hémolysine delta chez *Staphylococcus aureus*¹

Certains phages à l'état de prophage confèrent aux souches hôtes non toxigènes de *Staphylococcus aureus* la capacité de produire la toxine α ². La repression de l'hémolysine β par lysogénisation a été décrite par DE WAART et al.³ et par nous⁴ chez les souches staphylococciques d'origine clinique. Dans le présent article, nous

rapportons la perte de l'hémolysine δ chez *S. aureus* sous l'action phagique. La lysogénisation de la souche BSS⁵ avec le phage ϕ RE n'est que rarement (fréquence correspondant à celle de la transduction) accompagnée par le changement au niveau de la synthèse de l'hémolysine δ . Par contre, la lysogénisation de la même souche BSS