killing of the experimental animals showed most significant results. The control group of 6 infantile female rats of the same weight was injected i.v. with ^{131}I-bovine serum albumin (2 µg in 0.5 ml of phosphate buffer). Iodation was done in the same way as in the case of HCG. The value of cpm of the total amount applied was 6,000,000. The experimental design was the same as in the experimental group. No preferential incorporation was found in comparison with reference tissue, similarly to what has been shown by DE KRETSER et al.[5]. In our experiment with ^{131}I-HCG it was possible to establish a statistically significant uptake of radioactivity by the ovary, uterus and pituitary, but not by the suprarenal. It may be of interest in this connection that while LAURITZEN et al.[6] found a high concentration of HCG in the hypophysis of the human embryo by biological methods, they were unable to show its presence in the ovaries, just as TSUMUJI[7] some years ago did not find any preferential accumulation of ^{131}I-HCG in the ovaries of the rabbit.

We believe, however, that a most interesting result is demonstrated, namely a high accumulation of ^{131}I-HCG in the uterus. A direct effect of HCG on the uterus was only supposed by some authors up to now (for review see LAURITZEN[1]). This effect should be furthermore intensively studied.

Zusammenfassung. Die Einlagerung von ^{131}I-HCG und ^{131}I-Serumalbumin in einige Organe unreifer Rattenweibchen wurde gammaradiometrisch gemessen. Eine signifikant erhöhte Akkumulation der Radioaktivität nach ^{131}I-HCG-Verabreichung wurde im Ovarium, dem Uterus, der Hypophyse und der Schilddrüse festgestellt.

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Identification of Acrocentric Chromosomes Involved in the Formation of 'Fusion'-Metacentrics in Mice. Proposal for Nomenclature of *M. poschiavinus* Metacentrics

Cytogenetic methods have restricted value in the field of mouse genetics unless means are available to make the identification of individual chromosomes possible. Therefore, structural variations due to centric fusion of acrocentric chromosomes are of considerable interest because 'fusion'-chromosomes such as the T163H-[1], the T1Ald-[2,3], and the T1Wh-[4] metacentrics are recognizable cytogenetic markers of the respective mouse strains. Compared to these strains with a single pair of metacentric chromosomes each, the karyotype of the tobacco mouse, *M. poschiavinus*, is characterized by the presence of 7 pairs of Robertsonian 'fusion'-metacentrics[5,6].

Any further step contributing to the identification and individualization of the acrocentrics involved in translocation-fusions should be helpful in genetic studies in mice. Therefore, attempts were undertaken to identify the acrocentric constituents (chromosome arms) of the 'fusion'-metacentric of the T1Ald-translocation by crossing female AKR-mice homozygous for the T1Ald-chromosome ($2n = 38$; N.F. = 40) with the wild type tobacco mouse (*M. poschiavinus*) carrying 7 pairs of metacentrics ($2n = 26$; N.F. = 40). It can be assumed that the chromosomes of the AKR-strain as well as the acrocentrics of the laboratory mouse strains in general are homologous to the acrocentrics or to the arms of the metacentrics of the tobacco mouse. Whether or not the T1Ald-metacentric is among the 7 metacentrics of the tobacco mouse should be revealed by meiotic studies in F_1 offsprings of such crosses. However, other combinations could have been established by the fusions of the acrocentrics in both strains. F_1-animals can be expected to be heterozygous for 7 metacentrics of the tobacco mouse and for one T1Ald-metacentric. Yet, in the first case mentioned, primary spermatocytes of F_1♂ examined in diakinesis and first metaphase stages would show 6 trivalents and 6 bivalents including the bivalent built up by a homologous pair of metacentrics, and the *XY*-bivalent. In the other case more complicated figures would result.

In fact, a diploid chromosomal set (spermatogonia, bone marrow) of $2n = 32$ (N.F. = 40) with 8 metacentrics was found in the 3 F_1 males (Figure 1) and the 2 F_1 females from different litters so far studied. Rough measurements indicate that the T1Ald-chromosome

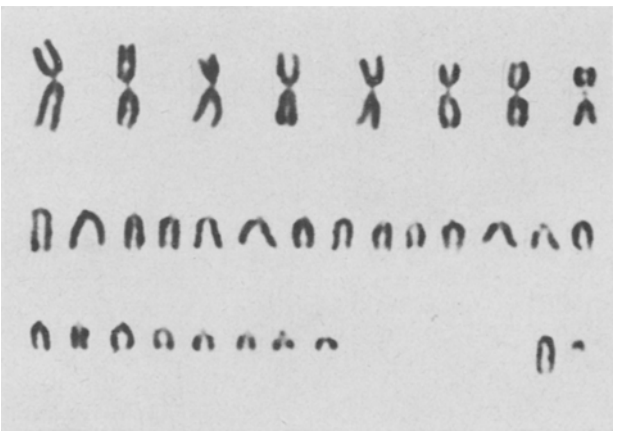

Fig. 1. Karyotype (bone marrow metaphase) of a (*M. poschiavinus* ♂ × AKR/T1Ald-T1Ald ♀) F_1♂. $2n = 32$; N.F. = 40.

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ranges between the 4th and the 7th element of the metacentric series. Altogether 500 diakinesis and first metaphase figures of primary spermatocytes of the 3 F_1 males were evaluated. They displayed invariably a chain-pentavalent, 5 autosomal bivalents and the *XY*-bivalent. The pentavalent (Figure 2) is composed of the AKR-T1Ald-metacentric as central piece and 2 of the tobacco mouse metacentrics as side pieces which, for their part, pair with AKR acrocentrics as flank pieces. This means that the 2 acrocentrics involved in the T1Ald metacentric are distributed among 2 different metacentrics in the tobacco mouse.

Even though an adequate individualization of the single metacentrics of the tobacco mouse (*M. poschiavinus*) is not yet possible, it may be convenient to foresee the necessity in later studies to use appropriate symbols describing their identity. This is acceptable because the individual chromosome arms of the tobacco mouse have preserved homology with the chromosomes of *M. musculus* (and the laboratory mouse) despite their probable taxonomic separation[6]. It is the more advisable as the tobacco mouse chromosomes can easily be introduced on to a laboratory mouse background. Therefore, the terms T1 Bnr – T7 Bnr are proposed as designation[7,8] for the 7 Robertsonian fusion metacentrics of *M. poschiavinus*.

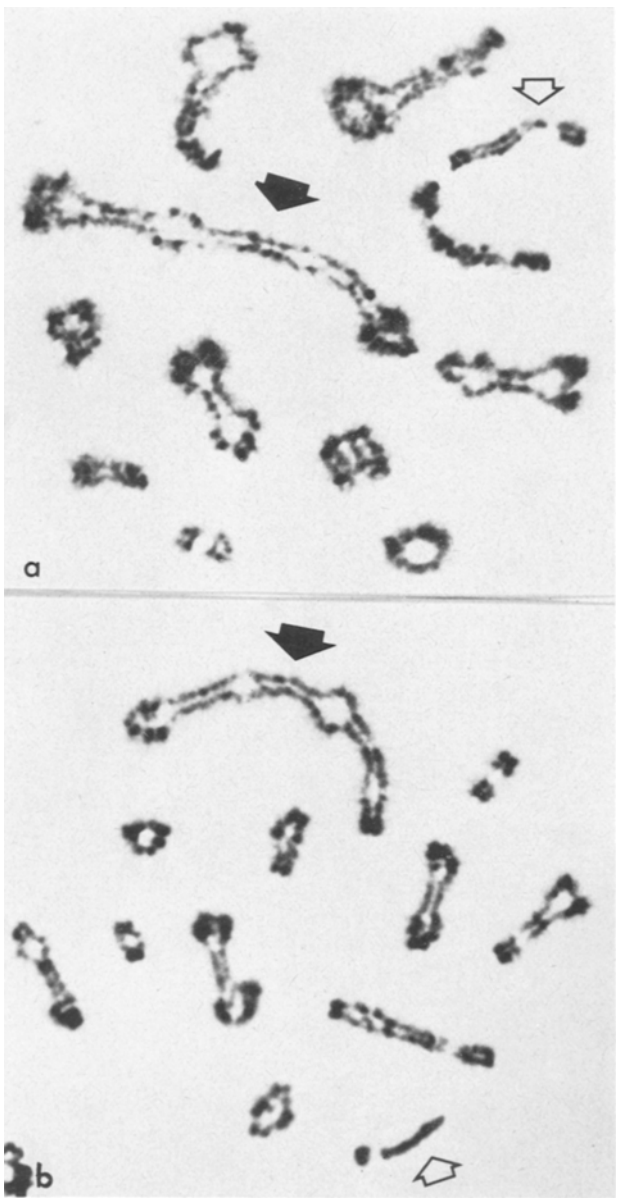

Fig. 2a and b. Late diakinesis figure of a F_1♂, showing a chain pentavalent (← pointing at the centromere of the T1Ald-chromosome) besides 5 trivalents, 5 bivalents and the *XY*-figure ⇒.

A tentative identification of the 2 tobacco mouse metacentrics each carrying one of the chromosome arms involved in the T1Ald metacentric can possibly be established by different means. It seems, indeed, reasonable to assume that the breeding of (*M. poschiavinus* × normal laboratory strain) F_1 × AKR/T1Ald-T1Ald and backcrosses of (*M. p.* × AKR/T1Ald-T1Ald) F_1 × AKR/T1Ald-T1Ald and others may be used as one possible way for a more exact identification of the acrocentric constituents (chromosome arms) of 3 'fusion'-metacentrics, (1 from the AKR/T1Ald and 2 from the tobacco mouse). Mitotic and meiotic studies of such crossbreedings and backcrosses combined with analyses of the occurrence of non-disjunction in first meiotic anaphase have been started in our laboratory. Furthermore, preliminary results on the autoradiographic analysis of DNA-replication after ^{3}H-thymidin incorporation revealed distinct late replication patterns of at least 3, possibly 4, of the tobacco mouse metacentrics (in preparation). Other means of individualization of the 'fusion'-metacentrics can also be envisaged, e.g. genetic and cytological analysis of crossings of the AKR/T1Ald or of similar strains with lines outbred for single tobacco mouse metacentrics. Each of these different ways would be of great value in the attempts to determine the localization of genetic linkage groups at particular recognizable metacentrics by the combined use of crossbreedings with mouse strains of known linkage groups[1,9,10].

Zusammenfassung. Der Befund eines Pentavalents in der Meiose von (*M. poschiavinus* × AKR/T1Ald) F_1 zeigt, dass homologe akrozentrische Chromosomen bzw. Chromosomenarme unterschiedlich auf die metazentrischen Chromosomen der Tabakmaus (*M. poschiavinus*) und des AKR-Translokationsstammes T1Ald verteilt sind. Kreuzungsexperimente dieser Art dienen der Identifizierung einzelner Chromosomen oder Chromosomenarme bei der Maus. Für die sieben metazentrischen Chromosomen der Tabakmaus werden die Symbole T1–7 Bnr vorgeschlagen.

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