reading this book. It contains a very brilliant and stimulating analysis of the modern findings within cytology and genetics which can hardly be found in any other recently published work.

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OLLI HALKKA: A note on the chromosome numbers in the *Homoptera Auchenorrhyncha.* (Received November 2nd, 1956)

The following chromosome counts have been made on leafhopper material collected in the years 1949—1951 and 1953—1956 in various localities in South-western Finland. With two exceptions, formed by *Aphrophora forneri* and *Empoasca apicalis,* the nomenclature and the sequence of families are those used by OSSIANNILSSON (1946—1947). The counts have been made almost exclusively from sectioned material, fixed in BOUIN-ALLEN-BAUER, BENDA or CARNOY, and stained in FEULGEN, and in some cases also in HEIDENHAIN's haematoxylin. In addition, acetic alcohol FEULGEN squashes have been made. For every species, the number of chromosomes (bivalents and sex chromosome univalents when present) observable in the first spermatocyte division has been given. A note on the sex chromosome system has been enclosed in brackets. If any uncertainty exists as regards the sex chromosome system, a question-mark (?) follows the note. There are 90 species included in the list. Certain of the species (at least *Philaenus spumarius, Neophilaenus lineatus* and *Tettigella viridis*) have been studied by earlier authors.

ARAEOPIDAE: *Kelisia ribauti* W. WAGN. 15 (XO?), *Megamelus notula* GERM. 14 (XO), *Araeopus crassicornis* PANZ. 15 (XO), *A. pulchellus* CURT. 15 (XO), *Chloriona smaragdula* STÅL 17 (XO?), *C. glaucescens* FIEB. 16 (XO?), *Criomorphus affinis* FIEB. 15 (XO?), *Dicranotropis hamata* BOH. 15 (XO?), *Calligypona pellucida* F. 15 (XO), *C. forcipata* BOH. 15 (XO), *C. elegantula* BOH. 15 (XO), *C. pallens* STÅL 15 (XO), *C. sordidula* STÅL 15 (XO), *C. lugubrina* BOH. 13 (XY?), *Conomelus limbatus* F. 12 (XO), *Euconomelus lepidus* BOH. 15 (XO). — ISSIDAE: *Ommatidiotus dissimilis* FALL. 13 (XO). — CERCOPIDAE: *Lepyronia coleoptrata* L. 11 (XO), *Aphrophora alni* FALL. 15 (XO), *A. forneri* HPT. 15 (XY), *Philaenus spumarius* L. 12 (XO), *Neophilaenus exclamationis* THUNB. 10 (XY), *N. lineatus* L. 15 (XO). — EUPELICIDAE: *Eupelix depressa* F. 9 (XO). — EUACANTHIDAE: *Euacanthus interruptus* L. 13 (XO). — PROCONIIDAE: *Tettigella viridis* L. 10 (XO). — MACROPSIDAE: *Macropsis fuscula* ZETT. 11 (XO), *M. impura* BOH. 11 (XO), *Oncopsis flavicollis* L. 10 (XY), *O. tristis* ZETT. 11 (XO), *O. alni* SCHRNK. 10 (XY?). — IDIOCERIDAE: *Idiocerus lituratus* FALL. 12 (XO), *I. elegans* FL. 12 (XO?), *I. populi* L. 12 (XO), *I. confusus* FL. 12 (XO). — AGALLIIDAE: *Agallia venosa*

FALL. 11 (XO). — TYPHLOCYBIDAE: *Dikraneura aureola* FALL. 11 (XO), *Notus flavipennis* ZETT. 9 (XO), *Empoasca smaragdula* FALL. 10 (XO), *E. apicalis* FL. *sensu* NAST 9 (XO), *Cicadella pictilis* STÅL 8 (XO), *C. pulchella* FALL. 6 (XO), *C. concinna* GERM. 10 (XO), *C. cyclops* MATS. 9 (XO), *Typhlocyba douglasi* EDW. 10 (XO), *T. ulmi* L. 9 (XO), *Erythroneura rubrovittata* LETH. 11 (XO), *E. alneti* DAHLB. 12 (XO). — EUSCELIDAE: *Aphrodes bifasciatus* L. 12 (XO), *A. bicinctus* SCHRNK. 11 (XY?), *Strongylocephalus agrestis* FALL. 10 (XY), *Macrosteles sexnotatus* FALL. 9 (XO), *M. viridigriseus* EDW. 9 (XO), *M. fieberi* EDW. 9 (XO), *M. horvathi* W. WAGN. 9 (XO), *Balclutha punctata* THUNB. 9 (XO), *Graphocraerus ventralis* FALL. 9 (XO), *Doratura stylata* BOH. 10 (XO), *Paramesus nervosus* FALL. 9 (XO), *Paralimnus phragmitis* BOH. 10 (XO), *Scaphoideus marmoratus* FL. 9 (XO?), *Psammotettix confinis* DAHLB 9 (XO), *P. poecilus* FL. 9 (XO?), *Deltocephalus pulicaris* FALL. 10 (XO), *Sorhoanus assimilis* FALL. 9 (XO), *Arthaldeus pascuellus* FALL. 9 (XO), *Diplocolenus abdominalis* F. 9 (XO), *Lausulus flori* FIEB. 9 (XO), *L. allobrogicus* RIB. 9 (XO?), *Cosmotettix edwardsi* LINDB. 8 (XO?), *C. panzeri* FL. 8 (XO), *C. costalis* FALL. 9 (XO), *Limotettix striola* FALL. 6 (XO), *L. atricapilla* BOH. 6 (XO), *L. striatulus* FALL. 6 (XO), *Streptanus aemulans* KBM. 9 (XO?), *S. marginatus* KBM. 10 (XO), *Athysanus argentatus* F. 9 (XO), *Allygus mixtus* F. 7 (XO), *A. commutatus* SCOTT 10 (XO), *Macustus grisescens* ZETT. 8 (XY), *Thamnotettix confinis* ZETT. 9 (XO), *Solenopyx sulphurellus* ZETT. 8 (XO), *Cicadula intermedia* BOH. 8 (XO), *C. quadrinotata* F. 8 (XO), *C. saturata* EDW. 8 (XO), *Rhopalopyx preyssleri* H.-S. 8 (XO), *R. flaveolus* BOH. 8 (XO), *Speudotettix subfusculus* FALL. 10 (XO), *Coryphaelus gyllenhali* FALL. 9 (XO).

The list includes two cases in which two species belonging to the same genus have widely different chromosome complexes. In the Cercopid genus *Neophilaenus, N. lineatus* has 14 bivalents and a univalent X-chromosome, while *N. exclamationis* has 9 autosome bivalents and a sex chromosome bivalent. Again, in the family Typhlocybidae, *Cicadella concinna* has the haploid chromosome number 10, while *C. pulchella,* which is very like it both morphologically and as regards its habit of life, has only 6 chromosomes in the haploid set. It is a general rule that the larger the number of chromosomes, the smaller is their size. The smallest chromosomes have been found in the family Araeopidae, the largest among the Euscelidae in the genus *Limotettix.*

At least in one case a »fusion» between the X-chromosome and an autosome bivalent seems possible. In *Athysanus argentatus* there are 8 bivalents and an X-chromosome univalent in the first spermatocyte plate. In *Macustus grisescens,* a closely related species, there is a large XY-pair among the bivalents at this stage, the total number of bivalents being eight.

As far as the observations go, the sex chromosomes divide prereductionally in all the species. In the material there are a few species which may show bivalent auto-orientation, but this is by no means certain at present. Certain other interesting peculiarities shown by the material cannot be mentioned in this brief article.

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