

ILL Request



REG-10074684

MDUNIH

NLM -- W1 C379 (Gen)

National Institutes of Health (NIH)
 NIH Library
 10 Center Drive, MSC 1150
 Building 10 Room B1L306
 Bethesda, MD 20892-1150

ATTN:	SUBMITTED:	2016-12-23 10:46:30
PHONE: 301-594-6476	PRINTED:	2016-12-23 13:34:34
FAX: 301-	REQUEST NO.:	REG-10074684
E-MAIL: edelivery@nih.gov	SENT VIA:	DOCLINE
	EXTERNAL NO.:	2593

REG	NORMAL	Copy	Journal
-----	--------	------	---------

TITLE:	CIS; CHROMOSOME INFORMATION SERVICE
PUBLISHER/PLACE:	Society of Chromosome Research. Tokyo
VOLUME/PAGES:	1972;13():25 - 7 25 - 7
DATE:	1972
AUTHOR OF ARTICLE:	Abe, S.
TITLE OF ARTICLE:	NOTES ON THE CHROMOSOMES OF TWO SPECIES OF FRESH-WATER COTTI
ISSN:	0574-9549
OTHER NUMBERS/LETTERS:	NLM Unique ID: 0207027 39572119
SOURCE:	Unique Key
MAX COST:	\$4.00
COPYRIGHT COMP.:	Law
CALL NUMBER:	W1 C379 (Gen)
REQUESTER INFO:	Ciufo - TN: 2593

NLM Collection Access Section, Bethesda, MD

ILL Request



REG-10074684

DELIVERY: Odyssey: 206.107.44.214
REPLY: E-mail: edelivery@nih.gov

This document contains 5 pages. This is NOT an invoice.

Questions? Contact NLM: www.nlm.nih.gov/illcontact

THIS MATERIAL MAY BE PROTECTED BY COPYRIGHT LAW (TITLE 17, U.S. CODE)

NLM Collection Access Section, Bethesda, MD

was 17.3, 27.8 and 20.5 respectively. The remarkable increase in the chiasma frequency of the amphidiploid, which is more than two times that of the F_1 hybrid, shows that the pairing occurs only between the homologous chromosomes of the respective genomes. This conclusion can be further deduced from the fact that the amphidiploid contains the somatic complement of cassava and ceara rubber and the sum total of chiasma frequency of the two species is 48.3 (27.8+20.5) which is slightly more than observed in the amphidiploid. This observation clearly demonstrates the occurrence of preferential pairing in the present amphidiploid and the slight reduction in the chiasma frequency may be attributed to the physiological disturbances in ceara genome because of the fact, it is being associated with the cassava cytoplasm in the amphidiploid.

Anaphase I was usually regular with the normal distribution of 36/36 chromosomes at each pole (Fig. 4). However in about 10.5% cells, irregular distribution of chromosomes was noticed. Occasionally, lagging of chromosomes between the poles were also observed (Fig. 5). Subsequent meiotic stages were also regular in most of the pollen mother cells. However, pollen sterility was found to be as high as 99% (Fig. 6). It has been reported in different plant species that sterility in amphiploids is physiological in nature and is frequently associated with genically controlled unbalance, rather than with irregular chromosome behaviour alone (Stebbins, 1950). Thus in the present amphidiploid and presumably in the interspecific hybrid also, the sterility is genic in nature.

Acknowledgements: The authors wish to acknowledge the help and guidance received from Dr. M.L. Magoon and Dr. R.C. Mandal, the former and present Directors respectively during the course of this investigation.

References

- Jos, J.S., Magoon, M.L. and Mair, S.G. 1970. *Genet. Iberica* **22**: 27. Magoon, M.L., Jos, J.S. and Appan, S.G. 1966. *Chromo. Infor. Service* **7**: 9. Magoon, M.L., Jos, J.S., Vasudevan, K.N. and Nair, S.G. 1969. *Genet. Iberica* **21**: 27. Stebbins, G.L. 1950. *Variation and evolution in plants*. Columbia Univ. Press, New York.

Central Tuber Crops Research Institute, Trivandrum, India

13. Abe, Syuiti: Notes on the chromosomes of two species of fresh-water cottid fishes

This brief note describes the chromosomes of two species of Japanese fresh-water cottid fish, *Cottus nozawae* SNYDER and *Cottus hangiongensis* MORI. They distribute mainly in Hokkaido. Specimens for study were collected from southern parts of Hokkaido. They received intraperitoneal colchicine injection (5 μ g/body weight. g) for five to six hours before sacrifice. Pieces of kidney and testis were isolated, minced with scissors and suspended in 0.075M-KCL hypotonic solution for twenty to thirty minutes at room temperature, and then fixed with 1:3 aceto-methanol. Chromosome preparations were made following the routine air-drying method with Giemsa staining.

Karyotypes of *Cottus nozawae* are presented in Figure 1, A-C and that of *Cottus hangiongensis* in D. Results of karyotype analysis were given in Table 1. In all the studied specimens, heteromorphic sex-chromosomes were not detected, irrespective of the

Table 1. Karyotype analysis of two cottid fishes

	<i>Cottus nozawae</i>	<i>Cottus hangiongensis</i>
Diploid number	48	48
Bi-armed chromosomes (meta- & submetacentrics)	5 pairs	3 pairs
Mono-armed chromosomes (telo- & subtelocentrics)	19 pairs	21 pairs
Arm number	58	56

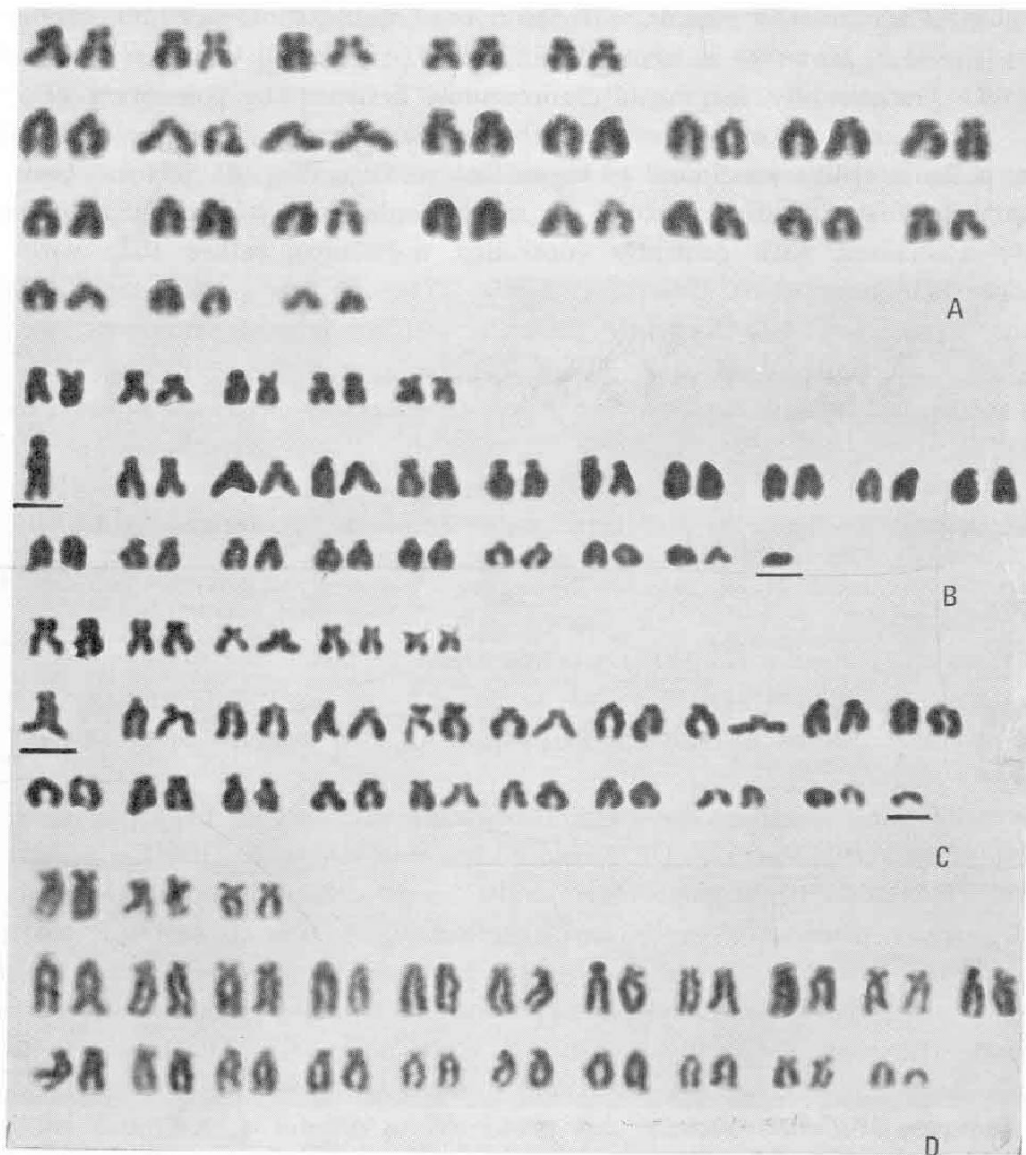


Fig. 1. Karyotypes of two species of *Cottus*. A-C: *Cottus nozawae* (A; male, B; male, C; female). D: *Cottus hangiongensis* (female).

report by Nogusa (1960) in *Cottus pollux* Günther. However, 7 individuals of *Cottus hozawae* (4 males and 3 females) out of 60 were found to contain two unpaired chromosomes, one being the largest subtelocentric chromosome and the other the smallest telo- or subtelocentric one (Fig. 1, B-C). Further detailed analysis is required for final conclusion, since they occur in both male and female cells. Moreover, there was no evidence for heteromorphic chromosomes at meiosis I.

I am grateful to Emeritus Professor Sajiro Makino, Chromosome Research Unit, and Professor Hidejiro Niiyama, Laboratory of Genetics and Embryology, Hokkaido University, for their kind advice.

References

Nogusa, S. 1960. *Memoirs Hyogo Univ. Agriculture, Biol. Ser.* 3: 1-60.

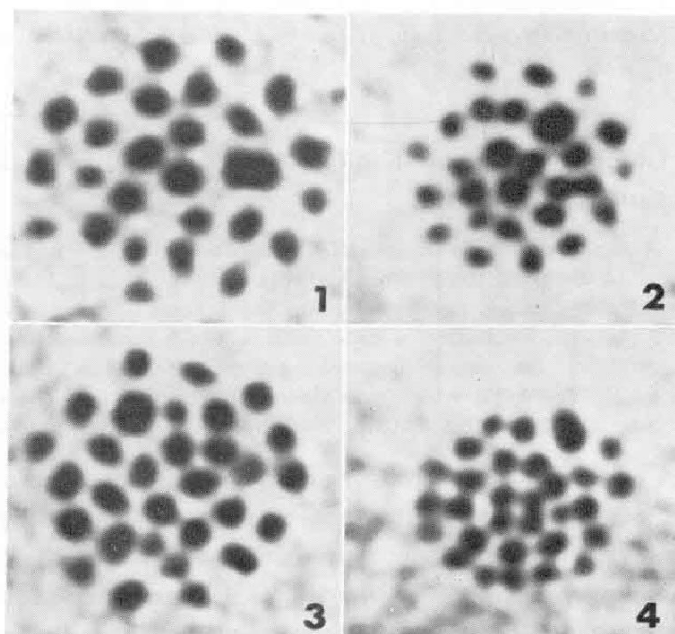
Laboratory of Genetics and Embryology, Faculty of Fisheries, Hokkaido University, Hakodate, Japan

14. Saitoh, Kazuo, Kudoh, Kohji, and Kumagai, Yoshinori: **Male meiotic chromosomes of *Olethreutes siderana* Treitschke and *Archips xylosteanus* L. (Lepidoptera)**

Two species of tortricoid moths, *Olethreutes siderana* Treitschke (Olethreutidae) and *Archips xylosteanus* L. (Tortricidae) were studied on spermatocyte chromosomes. Laboratory-reared larvae of final instar furnished testis-materials. Techniques applied were described already (Saitoh *et al.* 1969). Both species were identified by Dr. Toshio Oku of the Tohoku National Agricultural Experiment Station, Morioka and they are new to cytology. The present work is a part of our serial studies on the chromosomes of moths from Japan.

1) *Olethreutes siderana* (Japanese name: Ginboshimotoki-hamaki): Some larvae of this species were collected in Zatôishi near Hirosaki, Aomori Pref. in May of 1971. The haploid (n) number was determined as 27 from counting in 37 primary spermatocytes and 5 secondary spermatocytes from two males. Individual chromosomes are dot-shaped in outline. The haploid complement is remarkable by the occurrence of one large element (Figs. 1 and 2).

2) *Archips xylosteanus* (Japanese name: Kakumon-hamaki): Larvae were obtained in Dake at the foot of Mt. Iwaki, Aomori Pref. in July of 1971. The n number



Figs. 1-4. Spermatocyte metaphases. 1, *Olethreutes siderana*, first division, 2, same, second division. 3, *Archips xylosteanus*, first division, 4, same, second division. $\times 4000$.

was obtained as 30, based on 129 primary spermatocytes and 102 secondary spermatocytes from eight males. The haploid chromosomes are dot like in appearance. There is one large element in the haploid complement (Figs. 3 and 4).

Remarks: Three species of the Olethreutidae have hitherto been studied chromosomally in Japan. Their haploid (n) numbers were 22, 26, and 28 (Makino 1956; Saitoh and Kudoh 1968; Saitoh et al. 1971). *Olethreutes siderana* studied here differs apparently from them by showing $n. 27$.

In Japan, three species of *Archips* have so far been studied chromosomally. Their n numbers were consistently 30 containing one large element (Makino 1956; Saitoh 1960, 1966; Saitoh et al. 1971). This characteristics seems to be common in the other Japanese species of tortricids (Saitoh 1960, 1966; Saitoh and Kudoh 1970).

Acknowledgements: Our cordial thanks are due to Dr. Toshio Oku of the Tohoku National Agricultural Experiment Station, Morioka, for identification of the species studied and also to Professor Hajime Uchida of the Department of Biology, Hirosaki University, for his continued encouragement. The research by the second-named author was aided in part by a grant (Shiken No. 265, 1971) from the Foundation for Inservice Training and Welfare of the Private School Personnel.

References

- Makino, S. 1956. A review of the chromosome numbers in animals. Rev. ed., Hokuryukan, Tokyo.
 Saitoh, K. 1960. Japan. J. Genetics, **35** (2): 41-48. Saitoh, K. 1966. Japan. J. Genetics, **41** (4): 275-278. Saitoh, K. and K. Kudoh 1968. Kontyû, **36**(4): 403-405. Saitoh, K., K. Kudoh, and I. Komiya 1969. Sci. Rep. Hirosaki Univ., **16** (1/2): 30-36. Saitoh, K. and K. Kudoh 1970. La Kromosomo, **79/80**: 2562-2563. (In Jap. with Engl. summary). Saitoh, K., K. Kudoh, and M. Okada 1971. CIS, **12**: 8-11.

Department of Biology, Hirosaki University, Hirosaki, 036 Japan

15. Ohama, Koso and Kajii, Tadashi: **Decidual and embryonic karyotypes in spontaneous abortion**

Arakaki and Waxman (1970) reported a high incidence of chromosome abnormalities in the culture of decidual tissue from spontaneous abortion in man. Of the 68 cases successfully cultured, 9 showed abnormal karyotypes. The incidence of chromosome abnormalities in their series was 8/68 or 12 percent, excluding a case with a 16q+ chromosome, a normal variant. In 4 of the 9 cases, the amnion, an extraembryonic tissue which has the same origin as the embryo, yielded an abnormal karyotype which was different from that of the decidua. In view of this rather peculiar but interesting finding, culture of decidual tissue was attempted in parallel to that of the abortus.

A culture technique, developed in our laboratory, was employed: finely minced pieces of tissue were seeded onto a slide glass avoiding the use of plasma clot, cultured and harvested without being trypsinized. Of the 13 cases of decidua culture, 10 yielded suitable preparations (Table 1). The time needed for culturing decidual tissue in these cases was from 4 to 17 days. As seen from the Table, all the 10 cases showed a modal cell line of 46, XX karyotype. There appeared to be no correlation between the incidence of the tetraploid cells and the duration of the culture in the case of decidua, nor was there any relation between the tetraploid cells and ovulation age of the conceptus. Culture of

the
show

cultu
appa
XX,
with

ILL Request



REG-10074684

MDUNIH

NLM -- W1 C379 (Gen)

National Institutes of Health (NIH)
NIH Library
10 Center Drive, MSC 1150
Building 10 Room B1L306
Bethesda, MD 20892-1150

ATTN:
PHONE: 301-594-6476
FAX: 301-
E-MAIL: via Odyssey
EXTERNAL NO.: 2593

SUBMITTED: 2016-12-23 10:46:30
PRINTED: 2016-12-23 13:02:33
REQUEST NO.: REG-10074684
SENT VIA: DOCLINE
DOCLINE NO.: 39572119

REG	NORMAL	Copy	Journal	ANY FORMAT
-----	--------	------	---------	------------

TITLE: CIS; CHROMOSOME INFORMATION SERVICE
PUBLISHER/PLACE: Society of Chromosome Research. Tokyo
VOLUME/PAGES: 1972;13(0):25 - 7 25 - 8 DATE: 1972
AUTHOR OF ARTICLE: Abe, S.
TITLE OF ARTICLE: NOTES ON THE CHROMOSOMES OF TWO SPECIES OF FRESH-WATER COTTI
ISSN: 0574-9549 MAX COST: \$4.00
OTHER NOS/LETTERS: NLM Unique ID: 0207027 SOURCE: Unique Key

DELIVERY: Odyssey: 206.107.44.214
COPYRIGHT COMP.: Law
REQUESTER INFO: Ciufu - TN: 2593

Questions? Contact NLM: www.nlm.nih.gov/illcontact

THIS MATERIAL MAY BE PROTECTED BY COPYRIGHT LAW (TITLE 17, U.S. CODE)