Bull. Natn. Sci. Mus., Tokyo, Ser. A, **23**(4), pp. 213–220, December 22, 1997

Collection Records of Pamphiliid Sawflies (Hymenoptera) from Korea

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Abstract Collection data are given for 16 Korean pamphiliid sawflies belonging to *Acantholyda, Neurotoma*, *Onycholyda* and *Pamphilius*. Of these, two species of *Pamphilius*, *P. leucocephalus* Takeuchi, 1938, and *P. convexus* Shinohara, 1988, are new to the Korean fauna.
Key words: Hymenoptera, Pamphiliidae, collection records, Korea.

The pamphiliid sawfly fauna of Korea has been studied by Takeuchi (1927, 1938), Kim (1963, 1980), Shinohara (1979, 1980, 1985, 1988 a, b, 1991, 1993, 1995, 1997), Shinohara and Byun (1993, 1996) and others, and a total of 33 species belonging to five genera have been recorded from this country.

In the course of our recent studies on the pamphiliid sawfly collection of the Department of Biology, Yeungnam University, we have determined 16 species belonging to four genera, i.e., three species of *Acantholyda*, three species of *Neurotoma*, three species of *Onycholyda* and eight species of *Pamphilius*, which are enumerated in the following lines. Two species of *Pamphilius*, *P. leucocephalus* Takeuchi, 1938, and *P. convexus* Shinohara, 1988, are new to the fauna of Korea and for the remaining 14 species only scattered records have been published.

All the specimens treated in this paper are kept in Yeungnam University, Kyŏngsan, unless otherwise stated.

Shinohara thanks Prof. K.-T. Park, Kangwon National University, Chuncheon, and Mr. J.-W. Kim, Seoul National University, Suwon, for their help in various ways, and we thank Dr. S.-I. Uéno, National Science Museum, Tokyo, for his review of the manuscript. This work is supported in part by the Grant-in-aid for Scientific Research No. 07640943 from the Ministry of Education, Science, Sports and Culture, Japan.

Acantholyda erythrocephala (Linnaeus, 1758)

Specimens examined. Kyŏnggi-do: 1 ♀, Ŭijŏngbu-shi, Suraksan, 15. IV. 1989, D. K. Im. Kyŏngsangbuk-do: 1 ♀, Kyŏngsan-shi, Tae-dong, Yeungnam Univ., 7. V. 1987, J. W. Lee.

Distribution. Korea, Siberia, Europe, North America (introduced).

Remarks. This species was first recorded from Korea by Takeuchi (1927) and further discussed by Shinohara and Byun (1996). It is known as a pest of pine trees in Europe, but no outbreaks have been recorded in Korean forests. The collection data given above as well as in Shinohara and Byun (1996) suggest a wide occurrence of this species in Korea.

Acantholyda posticalis (Matsumura, 1912)

Specimens examined. Kyŏnggi-do: 1 ♀, Kwach'ŏn-shi, Ch'ŏnggyesan, 18. V. 1986, Y. J. Lee; 1 ♀, Namyangju-shi, Ch'ŏnmasan, 15. V. 1985, K. W. Ma.

Distribution. Korea, Siberia, Europe, Japan.

Remarks. This is a notorious pest of two-needle pines in Europe and Siberia. Saito (1928) first recorded this species from Korea as a pest of *Pinus densiflora* but no serious damages have been reported since then in this country. *Acantholyda posticalis* has been recorded from Kyŏnggi-do and Kyŏngsangbuk-do (Shinohara & Byun, 1996).

Acantholyda parki Shinohara & Byun, 1996

Specimen examined. Kyŏnggi-do: 1 ♀, Kwangnŭng, 8. VII. 1975, S. I. Oh.

Distribution. Korea.

Remarks. This recently described species is closely allied to *A. posticalis* and known as a serious pest of *Pinus koraiensis* in Korea. The specimen given above is from Kwangnŭng, Kyŏnggi-do, where Lee (1961, etc.) studied the biology of this species in detail. The species is known to occur in Kyŏnggi-do and Kangwon-do.

Neurotoma atrata Takeuchi, 1930

Specimen examined. Kangwon-do: 1 ♀, Tonghae-shi, Samhwasa, 27. VI. 1984, K. S. Lee.

Distribution. Korea, Russian Far East (Primorskij Kraj), Japan.

Remarks. This species was first recorded from Korea by Shinohara (1980) on the basis of four old specimens from Suwon, Kyŏnggi-do, and no additional collection data have been published. This is the first collection record from Kangwon-do. The larva feeds on *Quercus acutissima* (Shinohara, 1980).

Neurotoma coreana Shinohara, 1980

Specimens examined. Seoul/Kyŏnggi-do: 1 ♀, Suyu-ri, Hwagyesa, 6. V. 1989, H. S. Cho; 1 ♂, Kwach'ŏn-shi, Ch'ŏnggyesan, 21. IV. 1991, E. C. Kim; 1 ♀, same locality, 21. IV. 1991, H. K. Kim; 1 ♂, same locality, 21. IV. 1991, K. S. Kim (kept in

National Science Museum, Tokyo (NSMT)); 1 ♂, same locality, 25. IV. 1987, H. K. Kim; 1 ♀, Kwangju, Namhansansŏng, 12. V. 1991, K. Y. Yeun (NSMT); 1 ♀, Namyangju-shi, P'alya-ri, 3. V. 1986, Y. S. Kim; 1 ♂, Kwangch'ŏn-ri, 29. IV. 1984, J. W. Lee. Kyŏngsangbuk-do: 1 ♀, Kyŏngsan-shi, Tae-dong, Yeungnam Univ., 6. V. 1987, S. M. Ryu; 1 ♂, Kyŏngju-gun, Janghang-ri, 11. IV. 1992. S. M. Ryu. Kyŏngsangnam-do: 1 ♀, Milyang, Sajap'yong, 5. V. 1992. S. H. Cha.

Distribution. Korea.

Remarks. This is a Korean endemic species hitherto known to occur in Kyŏnggi-do and Kangwon-do (Shinohara & Byun, 1993) and newly recorded herewith from Kyŏngsangbuk-do and Kyŏngsangnam-do. There is no definite host-plant records, but it may possibly be associated with *Quercus* (Shinohara & Byun, 1993).

Neurotoma sibirica Gussakovskij, 1935

Specimen examined. Kangwon-do: 1 ♀, Inje-gun, Taeamsan, 30. V. 1992, J. W. Lee.

Distribution. Korea, Russian Far East (East Siberia to Sakhalin), Japan.

Remarks. In Korea, this species is known to occur in Hamgyŏngbuk-do and Kangwon-do (Shinohara & Byun, 1993). The larva feeds on *Sorbaria sorbifolia* var. *stellipila*.

Onycholyda viriditibialis (Takeuchi, 1930)

Specimens examined. Kyŏnggi-do: 1 ♀, Iryong, 24. V. 1981, Y. I. Cho; 1 ♀, Sudong-ri, Ch'ungnyŏngsan, 6. IX. 1980, K. S. Jang; 1 ♀, Namhansansŏng, 2. VI. 1974, E. C. Lee. Chŏllabuk-do: 1 ♀, Sŏlch'ŏn-myŏn, Mujuguch'ŏndong, 21. V. 1983, Y. M. Jo. Kyŏngsangbuk-do: 1 ♀, Kimch'ŏn, Chikchisa, 4. VI. 1978, H. B. Kim. Kyŏngsangnam-do: 1 ♀, Hamyang, 5. VII. 1990, S. M. Ryu; 2 ♀, Milyang, Saja-p'yong, 22. VI. 1993, H. K. Kim (one in NSMT); 1 ♂, Ch'ŏngdo-gun, Kajisan, 14. VI. 1989, S. M. Ryu.

Distribution. Korea, Russian Far East (Primorskij Kraj), Japan.

Remarks. This species has been recorded only from Hamgyŏngnam-do and Kyŏnggi-do (Shinohara & Byun, 1993), but now it is known to occur widely in Korea. The larva feeds on *Rubus crataegifolius*.

Onycholyda nigroclypeata Shinohara, 1987

Specimens examined. Kyŏnggi-do: 1 ♀, Sŏngnam, Changgok, 23. V. 1984, M. C. Kim. Chŏllabuk-do: 1 ♀, Tŏgyusan, 22. V. 1983, S. S. Han.

Distribution. Korea, Russian Far East (Khabarovskij Kraj, Primorskij Kraj), Northeast China.

Remarks. This species has been recorded from Kyŏnggi-do, Kangwon-do, Kyŏngsangbuk-do and Hamgyŏngnam-do (Shinohara & Byun, 1993) and this is the first record from Chŏllabuk-do. The host-plant is unknown.

Onycholyda odaesana Shinohara & Byun, 1993

Specimens examined. Kyŏnggi-do: 1 ♀, Namyangju-shi, P'alyari, 3. V. 1986, Y. S. Kim (NSMT); 1 ♀, Yangp'yŏng-gun, Yongmunsan, 28. VI. 1992, M. L. Kim; 1 ♀, Namyangju-shi, Ch'ŏnmasan, 12. V. 1991, Y. H. Kim; 1 ♀, P'och'ŏn, Wangbangsan, 2. VI. 1985, D. J. Jeun.

Distribution. Korea.

Remarks. This recently described species was known only from the holotype collected on Mt. Odaesan, Kangwon-do. The four specimens listed above represent the first record of this species from Kyŏnggi-do. The host-plant is unknown.

Pamphilius leucocephalus Takeuchi, 1938

(Fig. 1)

Specimens examined. Kyŏnggi-do: 2 ♀, Pogwangsa, 10. V. 1980, A. & N. Shinohara (NSMT). Kangwon-do: 1 ♀, Mirugam (Puktaesa), 1300 m, Mt. Odaesan, 30. V. 1991, A. Shinohara (NSMT); 2 ♂, same locality, 30–31. V. 1992, A. Shinohara (NSMT); 3 ♂, same locality, 27–28. V. 1993, A. Shinohara (NSMT); 1 ♀, same locality, 6. VI. 1997, J.-W. Kim (kept in Seoul National University, Suwon); 1 ♀, Yanggu-gun, Kach'ilbong, 31. V. 1992, J. W. Lee.

Distribution. Korea [new record], Russian Far East (Primorskij Kraj), Japan.

Remarks. This peculiar species is known to occur in Japan (Takeuchi, 1938) and Primorskij Kraj (Zinovjev, 1992), and this is the first record from Korea. The host-plant is unknown.

Pamphilius leucocephalus (Fig. 1) is a rather small (length 8–9.5 mm in female, 7.5–8 mm in male) but robust species, very easily recognized on its creamy white (with yellow or orange tint in life) and black coloration. The antennae and legs are black and the venation and stigma are creamy white, with only the apical half of the stigma being black. It is also characterized by the short antenna, with the ratio of the 3rd to 4th segments about 1.5–2.0 : 1.0 in the female and 1.2–1.6 : 1.0 in the male, the thin and short 1st radial crossvein (1r) in the forewing, and the hind tibia possessing only two preapical spurs.

Pamphilius kyutekparki Shinohara, 1991

Specimens examined. Kangwon-do: 1 ♂, T'aebaek-shi, Ch'ŏram 1-dong, 15. V. 1992, S. M. Ryu. Chŏllabuk-do: 1 ♀, Sŏlch'ŏn-myŏn, Mujuguch'ŏndong, 10. VI.

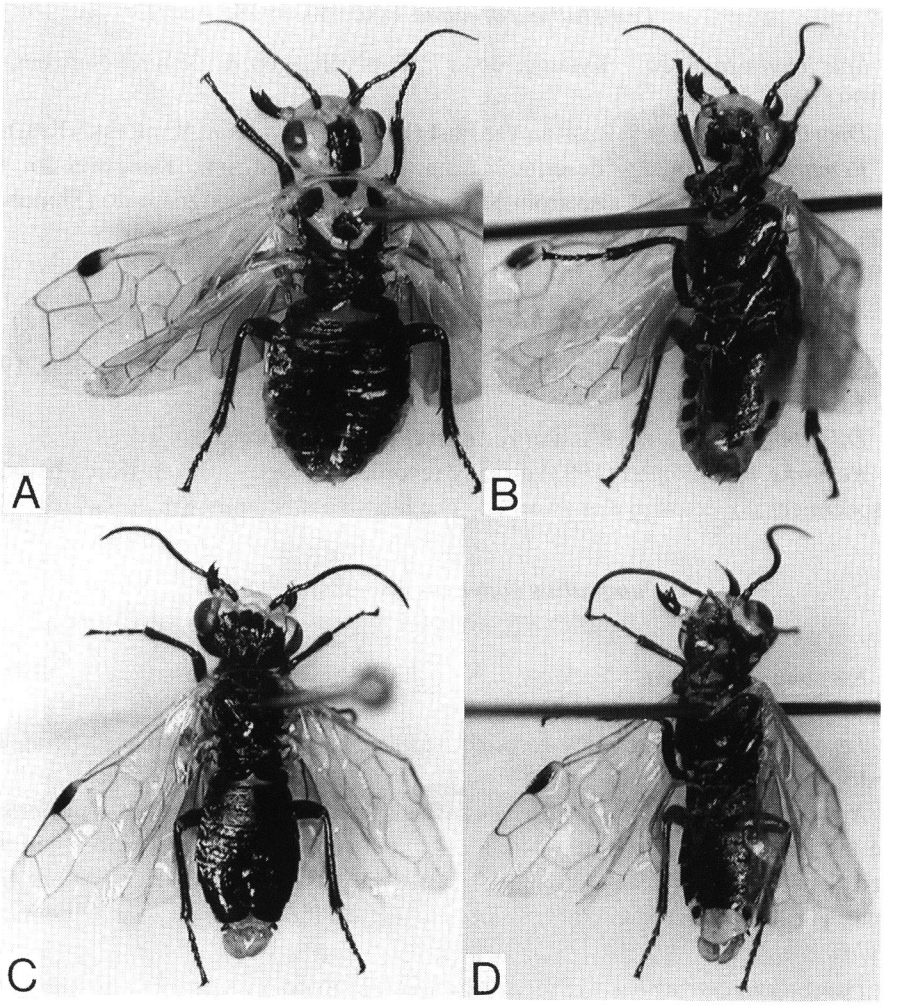

Fig. 1. *Pamphilius leucocephalus* Takeuchi, 1938, dorsal (A, C) and ventral (B, D) views. —— A–B, ♀, Pogwangsa; Kyŏnggi-do; C–D, ♂, Odaesan, Kangwon-do.

1972, J. H. Ryu; 1 ♀, same locality, 9. VI. 1972, J. I. Kim.

Distribution. Korea, Russian Far East (Primorskij Kraj).

Remarks. This species is distributed in the Russian Far East (Primorskij Kraj) and Korea, where it has been recorded from Kyŏnggi-do and Kangwon-do (Shinohara, 1991). The host-plant is unknown.

Pamphilius coreanus Takeuchi, 1938

Specimen examined. Kyŏnggi-do: 1 ♀, Pup'yŏng-gun, Ch'ŏngp'yŏngtaem, 14. VI. 1992, B. Y. H.

Distribution. Korea, Russian Far East (Khabarovskij Kraj, Primorskij Kraj).

Remarks. Originally described from Mt. Kumgangsan, Kangwon-do, this species has been recorded also from Kyŏnggi-do and Kyŏngsangnam-do (Shinohara, 1993). The host-plant is unknown.

Pamphilius zhelochovtsevi zhelochovtsevi Beneš, 1974

Specimen examined. Kangwon-do: 1 ♂, Yanggu-gun, Kach'ilbong, 31. V. 1992, J. W. Lee.

Distribution. Korea, Russian Far East (Primorskij Kraj).

Remarks. Shinohara (1993) already recorded this species from Korea based on the specimens collected in Kangwon-do. The host-plant is unknown.

Pamphilius convexus Shinohara, 1988

(Fig. 2)

Specimen examined. Seoul: 1 ♀, Kwach'ŏn-shi, Ch'ŏnggyesan, 12. V. 1990, H. J. Park.

Distribution. Korea [new record], Russian Far East (Khabarovskij Kraj, Primorskij Kraj).

Remarks. Shinohara (1988 a) described this species based on four females from the Russian Far East and no additional collection records have since been published. The specimen from Seoul represents the first record of *P. convexus* from Korea. The host-plant is unknown, though one of the paratypes was captured on *Corylus*.

Pamphilius convexus (Fig. 2) is distinguished from the other Korean congeners by the following combination of characters: length 8–9 mm; black with pale yellow marking, no orange areas on the abdomen; head generally smooth with only sparse punctures and hairs, with the exception of rugosely punctate clypeus and gena; frons and facial crest strongly roundly convex; 3rd antennal segment about 1.2 times as long as 4th; cell C of forewing glabrous; sawsheath and its peg very large (Fig. 2 D).

Pamphilius rhoae Shinohara, 1988

Specimen examined. Kangwon-do: 1 ♀, Yanggu-gun, Kach'ilbong, 31. V. 1992, J. W. Lee.

Distribution. Korea.

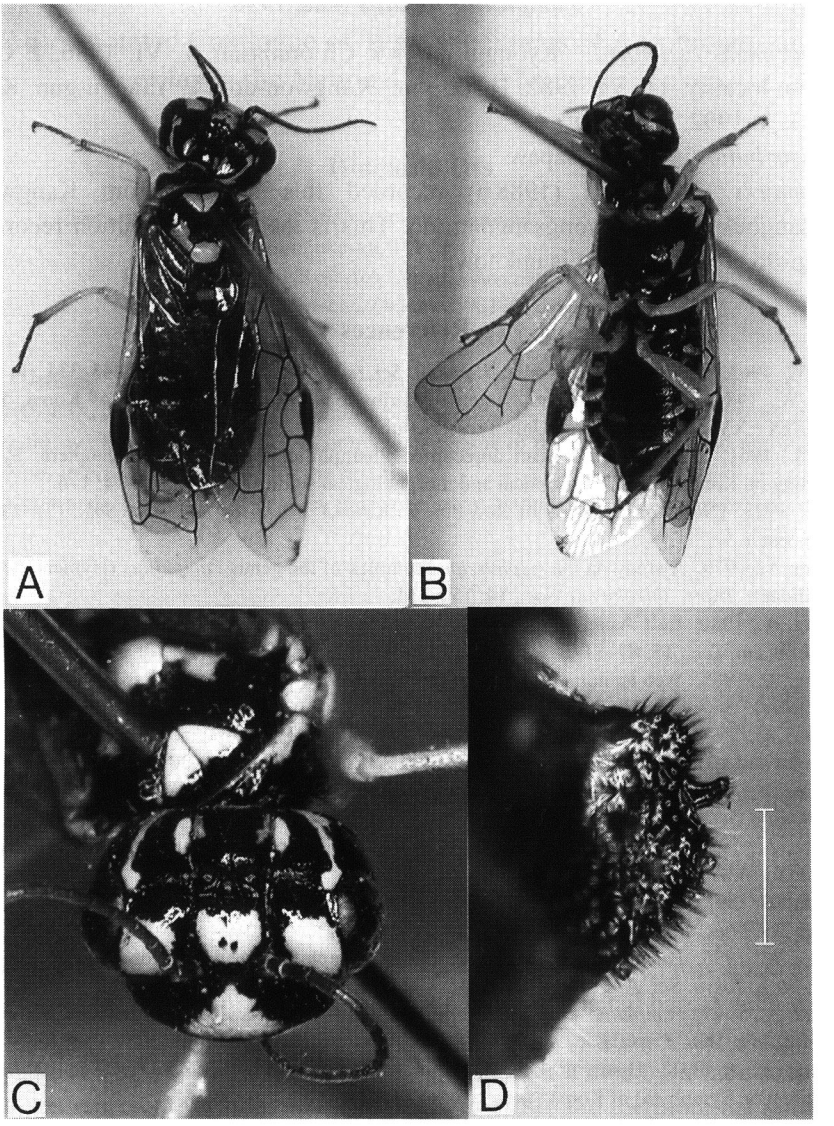

Fig. 2. *Pamphilius convexus* Shinohara, 1988, ♀, Mt. Ch'ŏnggyesan, Seoul. —— A, Dorsal view; B, ventral view; C, head, dorsofrontal view; D, sawsheath, lateral view (scale 0.3 mm).

Remarks. This species was originally described on the basis of the specimens from Kwangnŭng, Kyŏnggi-do (Shinohara, 1988 b) and this is the first record of the species from Kangwon-do. The host-plant is unknown.

Pamphilius lobatus Maa, 1950

Specimens examined. Kyŏnggi-do: 1 ♀, Ch'ŏnmasan, 7. VI. 1986, P. C. Sun; 1 ♂, same locality, 11. VI, 1982, H. D. Yim. Kangwon-do:1 ♀, Yanggu-gun, Kach'il-bong, 31. V. 1992, J. W. Lee.

Distribution. Korea, Japan.

Remarks. Shinohara (1988 b) recorded this species from Kangwon-do, Kyŏngsangbuk-do and Kyŏngsangnam-do. This is the first distribution record from Kyŏnggi-do. The host-plant is unknown.

References

Kim, C.-W., 1963. Hymenoptera of Korea. *Humanit. Sci. (nat. Sci.), Korea Univ.*, **6**: 243–374. (In Korean.)

Kim, C.-W., 1980. Hymenoptera and Diptera. Distribution Atlas of the Insects of Korea, Series 3. XXXIX+XVII+356 pp. Korea Univ. Press, Seoul.

Lee, D.-S., 1961. Studies on a Korean unrecorded Phamphilid[sic]-sawfly (Hymenoptera, Symphyta) feeding on Korean Pine. Taxonomical and morphological studies. *Kor. J. Zool.*, **4**: 1–6.

Saito, K., 1928. [Notes on the pests of Red Pine in Korea.] *J. Chosen nat. Hist. Soc.*, (7): 10–13. (In Japanese.)

Shinohara, A., 1979. A study on the *sulphureipes* complex of the genus *Pamphilius* (Hymenoptera, Pamphiliidae). *Trans. Shikoku ent. Soc.*, **14**: 151–161.

Shinohara, A., 1980. East Asian species of the genus *Neurotoma* (Hymenoptera, Pamphiliidae). *Trans. Shikoku ent. Soc.*, **15**: 87–117.

Shinohara, A., 1985. Web-spinning sawflies of the *sylvaticus* group of *Pamphilius* (Hymenoptera, Pamphiliidae). *Syst. Ent.*, **10**: 323–351.

Shinohara, A., 1988 a. The group of *Pamphilius sylvaticus* (Hymenoptera, Pamphiliidae)—Five new species and additional records from the Far East—. *Kontyû, Tokyo*, **56**: 307–320.

Shinohara, A., 1988 b. *Pamphilius stramineipes* (Hymenoptera, Pamphiliidae) and its close relatives. *Bull. natn. Sci. Mus., Tokyo, Ser.* A, 14: 179–197.

Shinohara, A., 1991. *Pamphilius alternans* (Hymenoptera, Pamphiliidae) and its close relatives. *Bull. natn. Sci. Mus., Tokyo*, Ser. A, **17**: 25–63.

Shinohara, A., 1993. *Pamphilius sulphureipes* (Hymenoptera, Pamphiliidae) and its close relatives. *Mem. natn. Sci. Mus., Tokyo*, (26): 111–123.

Shinohara, A., 1995. *Pamphilius histrio* (Hymenoptera, Pamphiliidae) and its close relatives. *Bull. natn. Sci. Mus., Tokyo*, Ser. A, **21**: 37–70.

Shinohara, A., 1997. *Pamphilius kimi*, a new species of leaf-rolling sawfly (Hymenoptera, Pamphiliidae) from Korea. *Jpn. J. syst. Ent.*, **3**: 227–230.

Shinohara, A. & B.-K. Byun, 1993. Pamphiliid sawfly genera *Neurotoma* and *Onycholyda* (Hymenoptera, Symphyta) of Korea. *Insecta koreana*, **10**: 75–91.

Shinohara, A. & B.-K. Byun, 1996. Conifer-feeding webspinning sawflies of the genus *Acantholyda* (Hymenoptera, Pamphiliidae) from Korea. *Insecta koreana*, **13**: 91–104.

Takeuchi, K., 1927. Some Chalastogastra from Corea. *Trans. nat. Hist, Soc. Formosa*, **17**: 378–387.

Takeuchi, K., 1938. A systematic study on the Suborder Symphyta of the Japanese Empire (I). *Tenthredo*, **2**: 173–229.

Zinovjev, A. G., 1992. Geograficheskoe rasprostranenie pilil'shchikov roda *Kelidoptera* Konow (Hymenoptera, Pamphiliidae) i bozmozhnost' faunisticheskikh svyazej yuzhnogo Urala s Maloj Aziej. In: Nasekomye v Estestvennykh i Antropogennykh Biogeotsenozakh Urala, Materialy IV Soveshchaniya Entomologov Urala (Perm', 24–26 Marta 1992 g.), pp. 55–57. Ekaterinberg.