

## A new species of the genus *Hexacentrus* (Orthoptera, Tettigoniidae) from Vietnam and its karyotypic features

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Abstract: *Hexacentrus inflatissimus* sp.n. from northern Vietnam is described. It is characterized by its large size, the wide hind lobe of pronotum, strongly inflated male tegmina with a very large stridulatory apparatus, and the karyotype consisting of  $2n=34$  (in the female).

Key words. Orthoptera, Tettigoniidae, *Hexacentrus*, new species, karyotype

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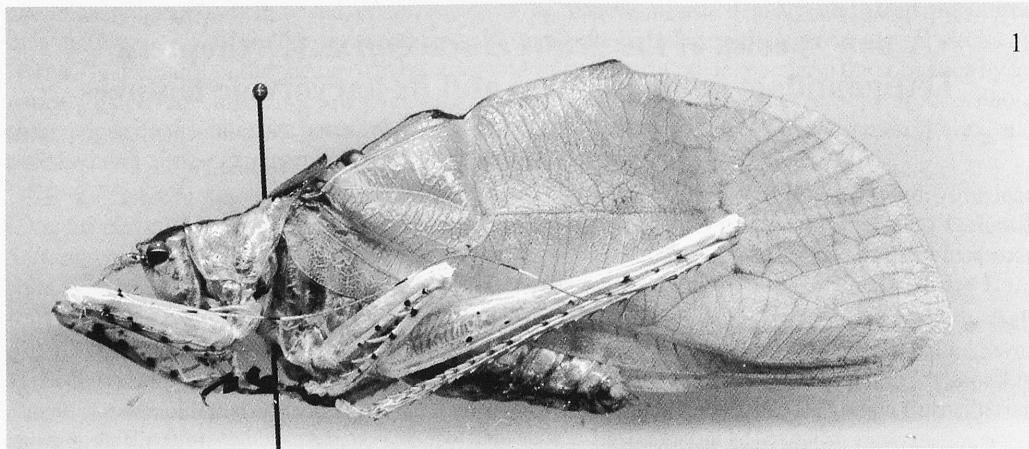
### INTRODUCTION

The genus *Hexacentrus* AUDINET-SERVILLE 1831 is a representative of the predatory tribe Hexacentrini. This tribe is distributed in the tropical and partly subtropical regions of the Old World (from Africa to Oceania) and belongs to the subfamily Conocephalinae. Sometimes, Hexacentrini are erroneously included in the American predatory subfamily Listroscelidinae. These groups, however, are only ecological analogues well distinguished from each other by distinctly different hind wing venations: very primitive plesiomorphic in Listroscelidinae, distinctly modified synapomorphic in Conocephalinae, Saginae, Tympanophorinae, Tettigoniinae, Nedubinae, and Glyphonotinae (see GOROCHOV 1988, 1995).

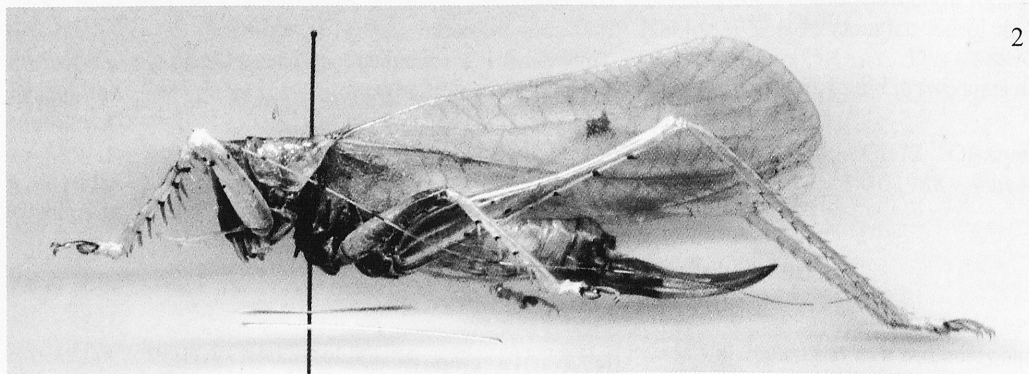
### *Hexacentrus inflatissimus* sp.n.

H o l o t y p e male, Vietnam, prov. Vinh Phu, Tamdao, 800-900 m, primary forest, 1-11.VI.1995 (A. V. GOROCHOV). Paratypes. 10 males, 6 females, 10 nymphs; same data as holotype, but 17.V-11.VI.1995 (A.V. GOROCHOV) and 15.V-5.VII.1997 (N. L. ORLOV). All adult specimens were collected after the beginning of June. Holotype and paratypes are deposited in the Zoological Institute, St. Petersburg.

**Description.** Male (holotype). Size large. Shape of body almost typical of this genus (Fig. 1). Eyes globular, not large; antennal cavities strongly approximate, but not contacted with each other; lower rostral denticle strongly reduced, appear as a narrow sloping convexity; upper rostral denticle very narrow (much narrower than scape), but rather high, lamellar, keel-shaped, with rounded apex in profile. Pronotum with long and wide hind lobe, straight fore edge of disc, widely



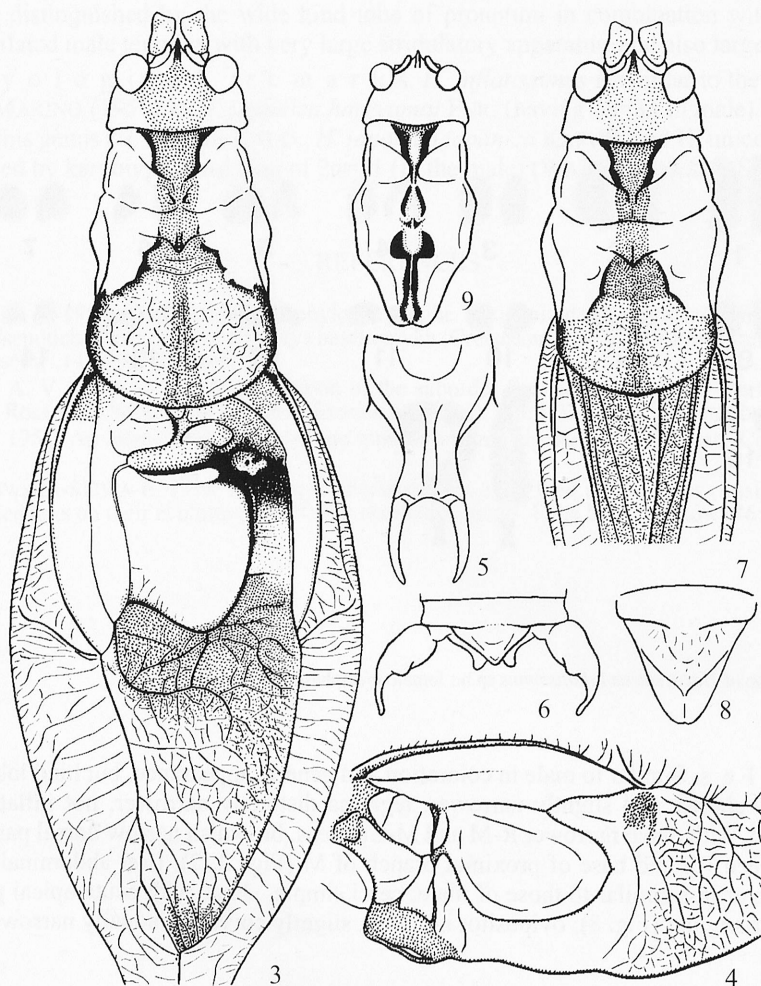
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Figs 1,2. *Hexacentrus inflatissimus* sp.n. from side: 1 – male (holotype); 2 – female. Length of body with wings of male 65 mm, – female 60 mm.

rounded hind edge of disc; pronotal disc distinctly narrowing between fore edge and hind lobe. Tegmina long, roundly widened, very inflated at proximal half, with distinct transverse fold from R-M area to anal edge of tegmen; this fold rather deep at lateral part and comparatively sloping at dorsal part of tegmina; RS short, with 3 branches; M with several branches only at distal part; R-M and M-Cu areas wide, with rather irregular transverse veinlets; stridulatory vein of upper tegmen very thick, but short, and apical area of dorsal part rather large (Fig. 3); mirror of lower tegmina strongly concave and almost oval (Fig. 4). Hind wings only slightly shorter than tegmina. Legs rather long; fore and middle tibiae with very slightly curved apical part and 6 pairs of long and slightly hooked spines; hind tibiae with rather numerous not long spines along both upper and both lower edges; femora with 3-4 short robust spines and numerous very small denticles at both lower edges; fore and middle femora strong and with 1 pair of small spine-like apical lobes, but hind femora rather slender and with 2 pairs of short apical spines. Prosternum with rather long and slender paired spines; mesosternum with distinctly shorter ones; metasternum with paired spine-like lobes (lengths of these lobes and mesosternal spines almost equal). Abdominal apex simple: hind edge of last ab-



Figs 3-9. *Hexacentrus inflatissimus* sp.n.: 3-6 – male: 3 – head (with scapes only), pronotum, and proximal half of tegmina from above, 4 – stridulatory apparatus of lower tegmen from above (Figs 3 and 4 – length of pronotum 14 mm), 5 – genital plate from below (length of stylus 2 mm), 6 – abdominal apex without genital plate from above (length of cercus 3 mm); 7,8 – female: 7 – head (with scapes only), pronotum, and proximal part of tegmina from above (length of pronotum 11 mm), 8 – genital plate from below (length 3.2 mm); 9 – head (without antennae) and pronotum of last instar nymph from above (length 8 mm).

dominal tergite almost straight, epiproct rather large and triangular, genital plate with narrow distal part and slightly curved long styles (Fig. 5), cerci as in Fig. 6; genitalia membranous. Coloration green with sparse brown spots on antennae, brownish upper part of head and fore half of pronotal disc, reddish brown hind half of this disc, light brown stridulatory vein of upper tegmen, brown spots around mirror and on apex of dorsal part of this tegmen, transparent mirror of lower tegmen, dark brown femoral spines and base of tibial spines, almost black spot around base of femoral and tibial spines, darkened small part of upper side of fore tibiae near distal edge of tympana and 2 distal segments of all tarsi.

**V a r i a t i o n s.** Sometimes, femora with slightly more numerous (5-6) short robust spines, upper part of head light brown with pair of almost yellowish longitudinal stripes, upper tegmen with slightly smaller darkenings and almost yellowish spot along medial (anal) edge of mirror.

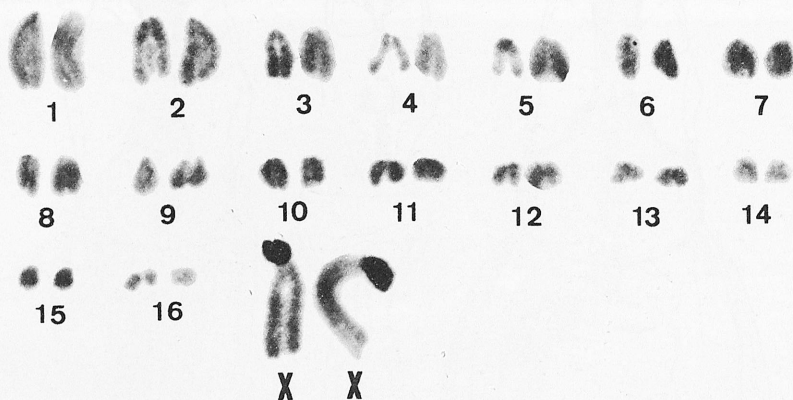


Fig. 10. Karyotype of *Hexacentrus inflatissimus* sp.n.: female metaphase. Bar equals 10  $\mu$ m.

**F e m a l e s.** Similar to male in coloration and general appearance, but hind lobe of pronotum distinctly shorter and slightly narrower, tegmina distinctly narrower, not inflated, without transverse fold, with much narrower R-M and M-Cu areas, brownish narrow dorsal part, and darkish spot between RS and base of proximal branch of M (Figs 2, 7). Last abdominal tergite and epiproct more or less similar to those of male; cerci simple, short, with acute apical part; genital plate almost triangular (Fig. 8); ovipositor not long, slightly curved, gradually narrowing to acute apex (Fig. 2).

**N y m p h s.** Coloration and general appearance more or less similar to those of imago, but hind lobe of pronotum narrow and elevated, pronotal disc almost entirely dark or with only a few paired darkish spots (Fig. 9).

**L e n g t h.** Body: male 40-45 mm, female 32-42 mm; body with wings: male 60-70 mm, female 58-62 mm; pronotum: male 12-14 mm, female 10-11 mm; tegmina: male 53-58 mm, female 50-52 mm; fore femora: male 13-15 mm, female 13-14 mm; longest spines of fore tibiae: male 3,4-3,6 mm, female 3,3-3,7 mm; hind femora: male 30-33 mm, female 29-32 mm; ovipositor 19-20 mm.

**K a r y o t y p e.** The chromosome complement of *H. inflatissimus* sp. n. consists of  $2n=34$  (sex determination is XX) in the female. All autosomes are acrocentric. Sixteen pairs consisting of two large and fourteen pairs gradually decreasing from medium to small size. The X chromosomes are the largest element of karyotype and can be considered as subacro/submetacentric owing to the presence of heterochromatic second arms. (Fig. 10).

**C o m p a r i s o n.** Very similar to *H. inflatus* REDT. from tropical Africa, but much larger and with several characteristic peculiarities of male tegmina: area between RA and RS clearly longer and wider, M with branches only at distal part of tegmina (in *H. inflatus* M divided into 2 branches at middle part of tegmina). Similar also to *H. annulicornis* STÄL, *H. femoralis* DOHRN, and *H. fruhstorferi* DOHRN, but larger, with long wings and round upper (anal) edge of rather short distal part (behind apical area of dorsal part) of male tegmina. From all other species of this genus *H. in-*



flatissimus distinguished by the wide hind lobe of pronotum in combination with long wings, strongly inflated male tegmina with very large stridulatory apparatus, and also large size.

**Karyological remarks.** *H. inflatissimus* is similar to the species determined by MAKINO (1951) as *H. japonica hareyamai* FUR. (having  $2n=33$  in male). Other studied species of this genus (*H. mundus* CAUD., *H. japonica japonica* KARNY, and *H. unicolor* SERV.) are characterized by karyotype consisting of  $2n=31$  (in the male) (WARCHAŁOWSKA-ŚLIWA 1998).

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