groups for the classification of *Orthotylus*, but a further world level revision is required to correctly redefine these subgenera and species groups. As pointed out by Southwood & Leston (1959), several subgenera and species groups will be upgraded to the generic level.

Most species of the genus are plant-feeders and several are of economic importance, whereas predation on psyllids, aphids, and lepidopteran and dipteran larvae has been frequently observed during my continuous surveys and also reported by some authors (Wheeler & Henry 1992, Yasunaga 1996, etc.).

Subgenus *Orthotylus* s. str.

Because the members of this subgenus exhibit great interspecific variation in the genitalia, several species groups have been proposed as mentioned above. However, these species groups were proposed mainly for European species, and are not always applicable to the members from other regions. Therefore, I do not use any of them here. Japanese species placed in the subgenus are recognized by the elongate or elongate oval body, principally green general coloration, dense, simple vestiture on the dorsal surface, peculiar shape of the parameres, 3 sclerotized appendages of the vesica (figs. 13, 17, 21, 25, 31, sclerites I-III), and developed female K-structure. The greenish coloration of the body is easily fading to yellow or brown after death.

In Japan the subgenus *Orthotylus* s. str. has been represented only by two species, *pallens* and *interpositus*, but the present study adds 3 species to the Japanese fauna.

Orthotylus* (*Orthotylus*) *pallens (Matsumura)
(figs. 1-2, 7-13, 32)

Calocoris pallens Matsumura, 1911: 39; Yasunaga et al. 1996: 92 (lectotype designated).
Orthotylus (O.) pallens – Miyamoto 1977: 232; Kerzhner 1988b: 833; Schuh 1995: 166; Todo & Yasunaga 1996: 43; Yasunaga 1996: 48.

Diagnosis. – Recognized by the moderate size, widely darkened head, pronotum, scutellum and hemelytra (fig. 1), striate frons, widened and flattened right paramere, and simple form of the K-structure. Very variable species in coloration; females are paler than males. This species is sometimes confused with *Stenotus binotatus* of the subfamily Mirinae, inhabiting gramineous grasses, but *Orthotylus pallens* is easily distinguished from it by the reduced pronotal collar and fleshy, apically convergent parempodia between the claws. The final instar nymph is recognized by the generally yellowish green body with a yellowish orange spot at the dorsal scent gland opening on the abdomen (fig. 2).

Redescription. – Body elongate, subparallel-sided; dorsal surface pale green but usually widely darkened, uniformly clothed with silky, suberect pubescence. Head pale green, weakly granulated, not strongly shining, vertical, with silky, upright pubescence; vertex usually darkened mesally, with basal transverse carina; frons usually widely darkened, striolate by 3-4 pairs of transverse grooves; tylus dark brown. Antennae dark brown; segments I, II and basal part of III sometimes pale in ♀; lengths of segments I-IV (♂/♀): 0.48-0.53/0.48-0.53, 1.92-2.14/1.80-1.88, 0.96-1.11/0.96-1.04, 0.57-0.60/0.50-0.58. Rostrum pale brown, reaching but not exceeding apex of middle coxa; apical half of segment IV infuscate. Pronotum pale green, usually widely darkened by symmetrical paired markings (that are sometimes reduced and becoming a pair of spots or stripes), shallowly and transversely rugose, uniformly clothed with silky, suberect pubescence; mesoscutum and scutellum varying from pale green to entirely dark brown, shagreened, bearing silky, suberect pubescence; pleura pale green, but partly infuscate in ♂. Hemelytra pale green, uniformly clothed with silky, suberect pubescence; corium and clavus usually widely (or sometimes entirely) dark brown; inner margin and apex of cuneus sometimes darkened; membrane sombre greyish brown. Legs pale green; tibial spines pale brown; tarsi (especially tarsomeres III) darkened; lengths of hind femur, tibia and tarsus (♂/♀): 1.70-1.92/1.84-2.00, 2.64-2.86/2.64-2.84, 0.52-0.53/0.52-0.56; lengths of hind tarsomeres I-III (♂/♀): 0.16-0.21/0.18-0.20, 0.25-0.27/0.26-0.27, 0.25-0.28/0.24-0.28. Abdomen widely dark brown in ♂, unicolorously pale green in ♀. Male genitalia (figs. 7-13): Genital segment without any spines (7); left paramere with long, apically curved hypophysis (fig. 12); right paramere variable in general shape, widened and flattened, with minute teeth dorsally (figs. 8-11); vesical sclerite I with strongly curved and toothed apex; sclerite II strongly curved and twisted subapically; sclerite III toothed and 2-branched (fig. 13). Female genitalia (fig. 32): K-structure simple, gradually narrowed towards apex.

Dimensions. – ♂/♀: Body length 5.28-5.91/5.42-5.62; head width including eyes 0.99-1.01/1.00-1.01; vertex width 0.36-0.39/0.45-0.46; rostral length 1.48-1.66/1.60-1.68; mesal pronotal length 0.81-0.89/0.87-0.89; basal pronotal width 1.48-1.52/1.51-1.55; width across hemelytra 1.80-1.90/1.84-1.92.

Distribution. – Japan (Hokkaido, Honshu, Shikoku*, Rishiri Is., Rebun Is., Yagishiri Is.*), S. Kuril Isls., Russia (S. Sakhalin).

Biology. – This is one of the commonest species among the willow-inhabiting mirid bugs in Hokkaido (Todo & Yasunaga 1996). It seems to have a univoltine life cycle, and the adults usually emerge in late June. The eggs are laid in shoots of willow (*Salix* spp.,