

From our present knowledge, the true status of *atrox* is impossible to determine with any finality. Three possibilities seem worth considering.

(1) *Atrox* may be a northern or upland variant of *japonicus*. This has against it the apparent intermediate nature of the clypeus, if this character may be trusted. Also, *atrox* has not been found in Japan, although *japonicus* is of course abundant there. Where it occurs, *atrox* is apparently within the range of *japonicus*, so that the differences, if they are genetically controlled, would have to be under simple, all-or-none genetic control if applying to one and the same species.

(2) *Atrox* may be the result of occasional hybridization between *japonicus* and *herculeanus*. This possibility would be worth more consideration if the second putative parent, *herculeanus*, had ever been found unequivocally associated at even a single locality with *japonicus* and *atrox*. There appear to be no safe records of the three forms from any one locality. If hybridization occurs, one would expect it to affect not only color, but also sculpture and pubescence, in the same areas where *atrox* was found; there exists no evidence to this effect. The lack of *atrox* in Japan does not mean too much, because there even the *herculeanus* are nearly or quite completely black.

(3) Possibly *atrox* is a species apart from both *japonicus* and *herculeanus*. If this is the case, *atrox* might represent the remnants of the parent stock (from which *japonicus* diverged), now caught between *japonicus*, expanding from the south, and *herculeanus*, occupying the far north. This third possibility may be the best one we can entertain for the time being, and so long as *atrox* seems to have a fair chance of being a good species, it will be best to recognize *Camponotus atrox* Emery (NEW STATUS) as a provisional full species.

The new examination of the *japonicus-herculeanus* "intergrades" shows that most of these forms can be placed to one or the other of the two species, and that they are probably not the result of interbreeding. At most, one could claim a limited amount of hybridization to account for some of these variants, but the availability of alternative explanations makes even this moderate hypothesis seem rather superfluous. At any rate, there is no good reason to continue to consider *japonicus* a "subspecies" of *herculeanus*; instead, we return to the original concept of Gustav Mayr, who described *Camponotus japonicus* as a good species. The certain synonyms of *C. japonicus* at this writing are: *aterrima* Emery, *saxatilis* Ruzsky, *sanguinea* Karawajew, *mittotus* Wheeler and *wui* Wheeler. Forms of uncertain affinities, but probably belonging to *C. herculeanus*, are: *jakutica* Karawajew, *sachalinensis* Forel, and *manczshurica* Ruzsky.