

white, yielding the effect of a bluish "bloom" in fresh specimens seen without magnification. Creighton cites the Black Hills of South Dakota as the eastern limit of *haemorrhoidalis* and the western limit of *integra*, yet he does not mention intergrades from this region. Wheeler and Wheeler, on the other hand, mention finding no *integra* samples in North Dakota, while, under the present interpretation, *haemorrhoidalis* is found throughout most of that state. These apparent contradictions will have to be resolved by the study of more material from the Dakotas, but for the time being I am going to treat *haemorrhoidalis* and *integra* as the distinct species that the available evidence indicates they are.

2. SYNONYMY OF *RAVIDA*. Creighton placed *ravida* with *obscuripes* because they shared the character, "Head of the largest workers as broad as long (mandibles excluded)," versus "Head of the largest workers longer than broad (mandibles excluded)." Unfortunately, this difference cannot be confirmed by actual measurements on relevant specimens available to me. The largest of 5 syntype workers of *ravida* in the Museum of Comparative Zoology has a head length of 1.11 mm and a head width of 1.07 mm (error of measurement = about 0.01 mm). The lectotype of *F. haemorrhoidalis* measures HL 1.10 mm by HW 1.04 mm. These measurements are made in the manner generally considered standard by modern workers, and include the clypeus in the head length. Perhaps Creighton measured in some other way. If we assume that he ignored the clypeus, and took instead the mandibular insertions as his anterior reference point, then we can arrive at head lengths equal to or less than the respective widths. But if we do measure in this way, we find that species such as *integra* and *haemorrhoidalis*, which Creighton put in the "head longer than broad" category, also have the head broader than long in the largest majors. To sum up, we can say that Creighton's head length-width character as used in his keys to *Formica* species is undefined and will not separate at least some of the species it is supposed to, including *haemorrhoidalis* and *ravida*.