

Case 3069

***Solenopsis invicta* Buren, 1972 (Insecta, Hymenoptera): proposed conservation of the specific name**

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Abstract. The purpose of this application is to conserve the specific name of the fire ant *Solenopsis invicta* Buren, 1972 (FORMICIDAE). This ant is a well-known pest in the southeastern United States and Puerto Rico. The name is threatened by the poorly understood and little used senior subjective synonym *S. wagneri* Santschi, 1916.

Keywords. Nomenclature; taxonomy; Hymenoptera; FORMICIDAE; fire ants; North and South America; *Solenopsis invicta*; *Solenopsis wagneri*.

1. In a general paper on 'new and little known' South American ants, Santschi (1916, p. 380) described and named what he believed to be a new variety, *Wagneri*, of the species *Solenopsis saevissima* (F. Smith, 1855) from near Icaño, Santiago del Estero, Argentina; under Article 45g of the Code *wagneri* is treated as a subspecific name. Santschi included a brief description of the worker including its length, colour and the shape of the propodeum. A syntype worker is held in the Naturhistorisches Museum, Basel, Switzerland, and additional type workers 'probably exist' in the Muséum National d'Histoire Naturelle, Paris (Trager, 1991, p. 173). In a general paper on the ants of the Neotropics, Santschi (1923, p. 266) provided an additional short description of *S. saevissima wagneri*, as well as recording that he had examined material from Paraguay and Bolivia. Bruch listed *S. saevissima wagneri* as a host for a symbiotic beetle (1926, p. 18) and for a parasitic fly (1929, p. 436).

2. Creighton (1930, p. 76) reviewed the species of *Solenopsis* in the New World and changed the rank of *wagneri* to infrasubspecific as *S. (S.) saevissima electra* var. *wagneri*; he stated that he had seen no workers which could be certainly referred to this form. Wilson (1952, p. 64) examined the *Solenopsis saevissima* species-complex and placed *wagneri*, together with nine other species-group names, as junior synonyms of *S. saevissima saevissima*. This synonymy was accepted by Ettershank (1966) in his generic-level review of *Solenopsis* and by Kempf (1972) in his catalogue of the Neotropical region.

3. Buren (1972) examined the introduced pest species of *Solenopsis* which occurred in the southern United States, as well as their close relatives in South America. He

recognized that two distinct species were present in the southern United States, *S. richteri* Forel, 1909 and an undescribed species for which he proposed the name *S. invicta* (p. 9). Buren provided detailed descriptions and biological notes for *S. invicta* as well as other species related to it, including *S. saevissima*, from both North and South America. Unfortunately, Buren (1972) overlooked the available species-group names which Wilson (1952) and others had placed in synonymy (see para. 2 above). Thus only those names considered to be valid at the time of his study were considered by Buren (1972). Since its description, the literature citing *S. invicta* has grown to over 1,800 scientific publications (see Wojcik & Porter, 1997) covering a broad range of topics including: ecology (Vinson, 1994); genetics (Ross et al., 1987); chemical communication (Vander Meer, 1983); control methods (Collins, 1992; Williams, 1994); economic impacts (Lofgren, 1986); medical complications (Stafford, Hoffman & Rhoades, 1989); population biology (Tschinkel, 1993); and physiology (Vinson & Greenberg, 1986).

4. Trager (1991) examined the *S. geminata* species-group, which included *S. invicta*, *S. saevissima* and related species. After considering all available species-group names, he concluded that *S. wagneri* was conspecific with *S. invicta*, and not with *S. saevissima* as previously believed. However, he cited the original status of *wagneri* incorrectly as infrasubspecific (as *S. saevissima electra wagneri*; see para. 2 above) and believed it to be unavailable (p. 173). He continued the general usage of *S. invicta* as the valid name for the taxon.

5. Bolton (1995) corrected Trager's (1991) error by recognizing *S. wagneri* as an available name, and (pp. 388, 391) treated *S. invicta* as a junior subjective synonym of *S. wagneri*. Use of the little-known name *S. wagneri* constitutes a clear threat to nomenclatural stability for scientists from a wide range of disciplines and for non-scientists alike. While taxonomists might adapt to the usage of the name *S. wagneri*, such a change would considerably confuse and disrupt the non-taxonomic scientific literature concerning this species. We therefore propose that the use of *S. invicta* should be maintained because of its extensive use in the scientific literature (see para. 3 above), compared with the very limited use more than 60 years ago of *wagneri* in a South American context. Since Bolton (1995), well over 100 scientific papers have been published using the name *S. invicta* (Wojcik & Porter, unpublished bibliography). Up to 1998, three papers have used the name *S. wagneri* (Zakharov & Thompson, 1998; Semenov, Thompson, Jones & Semevsky, 1998; Semevsky, Thompson & Semenov, 1998). These three papers were published after the announcement in the *Bulletin* of our proposed conservation of the specific name of *S. invicta*, following which 'under Article 80 of the Code, existing usage is to be maintained until the ruling of the Commission is published'. This proposal to the Commission has the signed support of 76 colleagues who attended the 1998 Annual Fire Ant Research Conference in Hot Springs, Arkansas.

6. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to suppress the name *wagneri* Santschi, 1916, as published in the trinomen *Solenopsis saevissima wagneri*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the name *invicta* Buren, 1972, as published in the binomen *Solenopsis invicta*;

- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *wagneri* Santschi, 1916, as published in the trinomen *Solenopsis saevissima wagneri* and as suppressed in (1) above.

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