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RANGE EXPANSION OF THE HOBO SPIDER, *TEGENARIA AGRESTIS*, IN THE NORTHWESTERN UNITED STATES (ARANEAE, AGELENIDAE)

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ABSTRACT. The hobo spider, *Tegenaria agrestis* (Walckenaer 1802), was accidentally introduced into the United States probably in Seattle, Washington during the early 1900's and gradually spread through Washington, Oregon, Idaho and into southern British Columbia during the 20th Century. Concurrent with the expansion in range, there have been reports of necrosis in humans allegedly caused by bites from *Loxosceles reclusa* Gertsch & Mulaik 1940 (which does not occur in the Pacific Northwestern U.S or Canada) or *T. agrestis*. The geographic range of *T. agrestis* now extends into Montana, Utah, Nevada and most recently, central and southwestern Wyoming.

Keywords: Hobo spider, *Tegenaria agrestis*, Agelenidae, range expansion

The hobo spider, *Tegenaria agrestis* (Walckenaer 1802), has caused considerable concern in urban areas of the Pacific Northwestern United States and southwestern Canada in recent years. In Idaho we have been inundated since the early 1990's with spider specimens from homeowners, county extension offices, schools and commercial businesses requesting identification and information. Entomologists in Utah and Washington have had similar requests (Roe 1993; Baird & Akre 1993). Coinciding with this flood of requests, there have been many reports of supposed necrotic spider bites from physicians (Vest 1987a).

Vest (1987b) reported *T. agrestis* to cause necrotic spider bite syndrome in laboratory rabbits. More recently, however, Binford (2001) stated *T. agrestis* may have been ''falsely accused''. Furthermore, Binford (2001) and Akre & Myhre (1991, 1994) noted that there are no authenticated cases of *T. agrestis* being positively linked to a necrotic lesion. Russell (1986), Russell & Gertsch (1983), and Vetter & Visscher (1998) showed that the majority of diagnoses of necrosis due to spider bite are erroneous.

The medical community has often attributed these alleged spider envenomization cases to the brown recluse spider, *Loxosceles reclusa* Gertsch & Mulaik 1940, a species that does not occur and has never been collected in the northwestern United States or in Canada. Moreover, no specimens of *L. reclusa* have been collected or submitted for identification from this area. Thus, physicians who attribute bites to *L. reclusa* perpetuate misinformation causing undue fear and concern to family members and may lead to inappropriate or harmful recommendations or treatment.

METHODS

Suspected *T. agrestis* specimens were initially submitted to Vincent Roth, Portal, Arizona, Darwin Vest, Idaho Falls, Idaho, or Roger Akre, Pullman, Washington for species confirmation. Data from hundreds of *T. agrestis* specimens submitted by homeowners and county extension offices in Idaho were tabulated weekly from July through November 1992–2001 to determine seasonal activity.

We used several characters illustrated in Roth (1968) and Akre & Myhre (1991) to distinguish *T. agrestis* from *T. domestica* (Clerck 1757) and *T. duellica/saeva* Simon 1875. We relied on the male palpus and the female epi-

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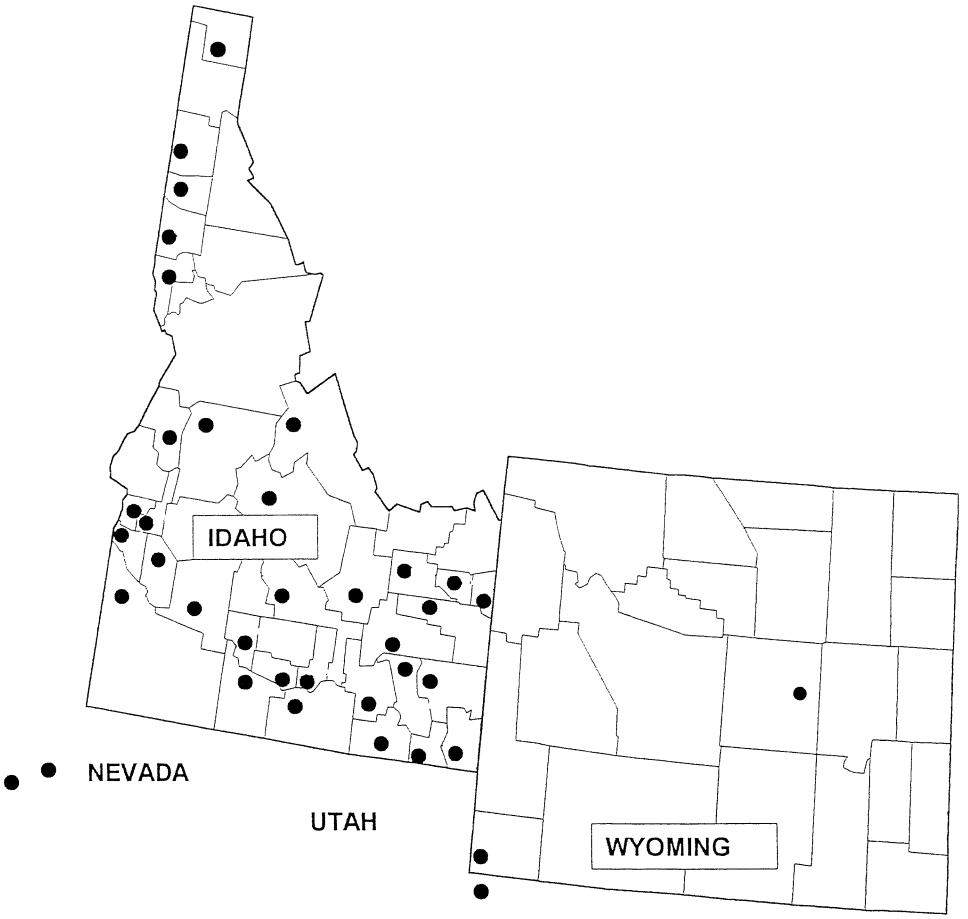

Figure 1.—Current distribution of *Tegenaria agrestis* in Idaho and Wyoming counties based on specimens submitted 1992–2001. ● = county in which *T. agrestis* has been collected. Nevada and central Wyoming locations are from singleton specimens. All other locations represent multiple collections of *T. agrestis* within that county.

gynum and the number of retromarginal teeth on the chelicerae for separation of the *Tegenaria* species. Voucher specimens are deposited in the California Academy of Sciences collection, San Francisco, California and in the W.F. Barr Entomological Collection, University of Idaho, Moscow, Idaho.

RESULTS AND DISCUSSION

Range.—*Tegenaria agrestis* has been confirmed from most Idaho counties (Fig. 1) and from most counties in Washington and Oregon (Akre et al. 1987). Bennett (pers. comm.) reports *T. agrestis* to be rare but locally abundant in various localities across extreme southern British Columbia but not yet established in Alberta. The spider has been collected in the western counties of Montana extending eastward to Havre and Billings (W. Lanier pers. comm.). Vest (pers. comm.) reported *T. agrestis* in western Wyoming in 1996 predating our collection of 1♂ from Uinta County, southwestern Wyoming, in 1997. More recently, a single *T. agrestis* specimen (sex not documented) was confirmed in Casper (Natrona County) in central Wyoming and additional specimens (4♂ and 2♀) were submitted from southwestern Wyoming (Uinta County) in 2000 and 2001(M. Brewer pers. comm.). The single Utah specimen (1♀) (Fig. 1) in our study was from Summit County where *T. agrestis* had been previously reported (Roe 1994). Utah records indicate *T. agrestis* had extended its range from the northern

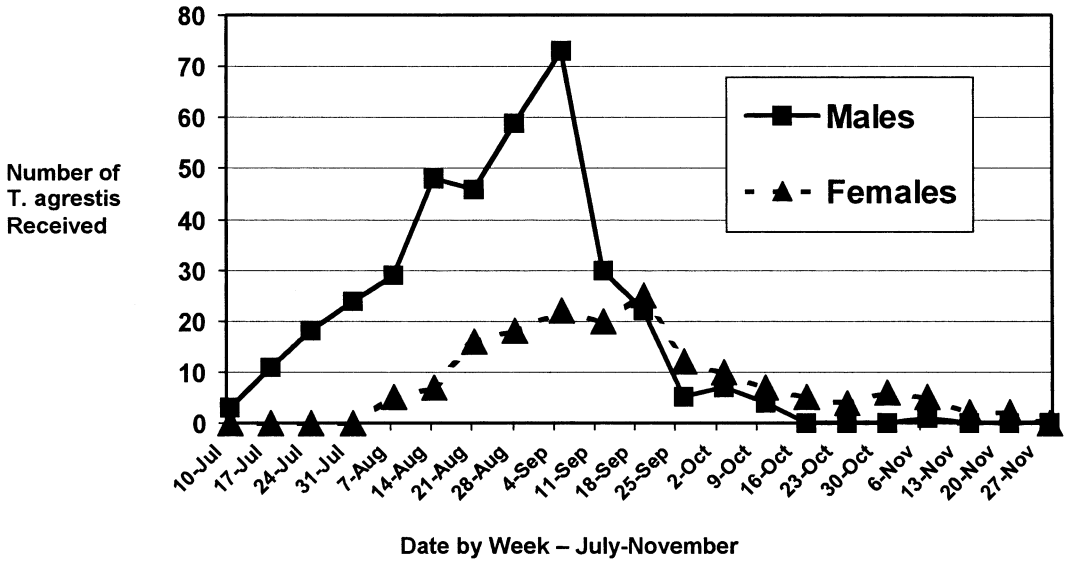

Figure 2.—Seasonal activity of *Tegenaria agrestis* adult spiders. Cumulative number of adult *T. agrestis* received weekly for identification in southern Idaho, USA, 1992–2001.

counties southward into Sanpete County by 1993. A recent collection of a *T. agrestis* specimen from San Juan County in southeastern Utah is thought to be the result of transportation of the spider in household goods and not from actual expansion of the spider's range (A. Roe pers. comm.). Single *T. agrestis* specimens were received from Winnemucca (1♂) and Lovelock (1♂), Nevada in 1995 but no other Nevada records are known. Except for the single specimens from Nevada and central Wyoming, all other locations in Fig. 1 represent multiple collections.

Season of submitted specimens.—Seasonal activity has been remarkably consistent with males being submitted beginning in early-July (Fig. 2). Corresponding with the expected normal life cycle this species, the peak of male activity was in late August and early September with declining numbers into October. Most female collections were in August and September with a peak in late September and a few specimens being submitted into November. *Tegenaria agrestis* specimens received during the fall and early winter months were fewer in number and mostly females. Of the hundreds of specimens sent to us during the 1990's, almost all were mature adults taken from human dwellings or adjacent buildings or woodpiles. Bennett (pers. comm.) reports that in British Columbia *T. agrestis* can be very abundant in dry, open outdoor settings and may be common under driftwood above the high tide line at certain sandy beaches on southern Vancouver Island.

Observations on the diagnostic characters for distinguishing between species.—The morphology of the male palpus and female epigynum are the only truly reliable characters that will separate the North American species of *Tegenaria*. The number of teeth on the retromarginal area of the chelicerae is a dependable character for differentiating *T. domestica* and *T. agrestis;* the tooth count for *T. domestica* at three to four teeth and *T. agrestis* at five to seven teeth per retromargin. These numbers compare closely with Roth (1968) and Akre & Myhre (1991). The darker coloration and banded legs of *T. domestica* provided initial separation from lighter colored *T. agrestis* with unbanded legs in our study area. Sternal patterns as illustrated in Akre & Myhre (1991) did not allow positive identification.

Other spiders received.—Many other species of spiders were received between 1992 and 2001 in addition to the *Tegenaria* cited above. One male specimen of *T. duellica/saeva* was identified from Twin Falls County, Idaho. Other agelenids included many specimens of *Hololena nedra* Chamberlin & Ivie 1942 (det. Vincent Roth), a common house-

hold invader in southern Idaho and occasional specimens of *Agelenopsis* sp. that are common in grassy areas outdoors but seldom indoors. Other spiders submitted included theridiids *Latrodectus hesperus* (Chamberlin & Ivie 1935) and various *Steatoda* including *S. triangulosa* (Walckenaer 1802) and *S. grossa* (C.L. Koch 1838) many unidentified gnaphosids and occasional clubionids including *Cheiracanthium* sp., a common inhabitant of human dwellings in southern Idaho. Many specimens of Araneidae were received including *Argiope* sp. and *Araneus* sp. and a few unidentified lycosids and salticids. Significantly absent from the hundreds of spider specimens submitted were any specimens of *Loxosceles reclusa* or other species of *Loxosceles* to which necrotic arachnidism has been erroneously attributed in the Pacific Northwest.

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