



**Arachne, Ally of Ares**

➤ POOR ARACHNE, victim of a raw deal on the part of envious Athena, has turned to the roughest of Olympian masculine company: she makes the dreadful contrivances of Haephestus more useful to Ares. To step out of the metaphor, spider-web threads are an important item in the terrible accuracy of present-day artillery.

If you get a chance to peep through the telescopic sight of a field piece or a naval gun, or into any one of the numerous optical aids to long-range destruction, such as a range or height finder, a battery commander's telescope, or one of those amazing instruments that automatically forecasts the position of an enemy bomber in the sky for the benefit of the anti-aircraft guns, you will invariably find the circular field of vision neatly divided into quadrants by two very fine lines that cross at exact right angles in the center of the circle. Cross hairs, ordnance men call them. Get the point of crossing right on the target, be sure your range, deflection, windage and other factors are correct, and you have a bulls-eye coming.

These cross hairs are hairs in name only. Actually, they are crossed spider-

web threads. Raising spiders for the purpose of supplying these optical landmarks is a regular industry in this country. It is only a small one, to be sure: probably not more than ten or a dozen persons are engaged in it even now. One spider can furnish a great deal of filament, and for any given instrument a couple of inches is all that is needed.

Most spiders can produce more than one kind of web filament. The thin, sticky threads that actually trap insects are not suitable for use in optical instruments; they are beaded at close intervals with drops of adhesive stuff that would be most distracting. But the thicker, smooth cable spun by a spider when she lets go and drops to escape from a dangerous or embarrassing situation is ideal, especially since it is usually spun in several distinct strands which can be split and used separately.

Certain species of spiders are preferred over others for this highly specialized kind of product, choice being largely on fineness and evenness of diameter. The group of round-bellied spiders that spin rather aimless, ramshackle webs seem, curiously enough, to be the best producers of this kind of filament. And notable among their number is our notorious, highly poisonous acquaintance, the Black Widow.

However, for quick repairs in the field, any kind of spider will serve. All you need to do is catch one, put her on a forked twig, and when she drops off, twirl the twig rapidly as she descends on her rapidly-spun cable. You will thus harvest enough filament to replace the cross hairs in a dozen gunsights.

*Science News Letter, May 6, 1944*

**CHEMISTRY**

**Chemical Protects Wood Against Fungi and Rot**

➤ DEFENSIVE warfare against a hidden enemy is contemplated in patent 2,347,635, obtained by Dr. Frank B. Smith of the Dow Chemical Company,

and assigned by him to his employing firm. It is on a process to discourage fungi and other rot organisms from attacking green lumber while under treatment to prevent cracking and splitting. Standard treatment of fresh lumber, Dr. Smith points out, is to get it well wetted down with a solution of some chemical that attracts water. Recently such organic compounds as sugar and urea have shown promise, but they have the handicap of offering extra food for the organisms of decay. To discourage these, he simply adds an adequate concentration of one of the chemicals of the chlorophenol group, which are quite effective fungicides.

*Science News Letter, May 6, 1944*

Bulgaria is reported to have shale deposits rich in *petroleum* in mountainous areas from which production is expected soon.

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