

April 1967

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Recommended Citation

Wilkinson, Ronald S. 1967. "Réaumur's Insect Collecting Net of 1736," *The Great Lakes Entomologist*, vol 1 (4)

DOI: <https://doi.org/10.22543/0090-0222.1049>

Available at: <https://scholar.valpo.edu/tgle/vol1/iss4/8>

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RÉAUMUR'S INSECT COLLECTING NET OF 1736

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In several recent papers (Wilkinson, 1966a, 1966b, 1966c, 1967), I have discussed the interesting origins of modern collecting nets. Actual illustrations of nets are very rarely found in entomological literature before the 1750s, and we are extremely lucky to have in Réaumur's classic *Mémoires pour servir à l'histoire des insectes* (Paris, 1734-42), a very early depiction of one of the ancestors of our present bag-net, with an explanation of its construction.

René Antoine Ferchault de Réaumur (1683-1757) is probably best known for his thermometer, still used in some countries. A prominent member of the Académie des Sciences, Réaumur distinguished himself in many fields of endeavor. His *Mémoires* contain the results of original research on such topics as the community life of social insects and the development of parasitic Hymenoptera. A follower of Swammerdam, Réaumur studied the immature stages of many species of insects and made a significant contribution to our knowledge of the nature of metamorphosis.

Each of the six volumes of the *Mémoires* contains an engraved vignette, placed after the preliminaries as a headpiece to the main body of the volume. Our illustration from Réaumur (Fig. 1) appears in t. 2 (1736) and shows a group of collectors using a curious variant of the bag-net. Réaumur gives careful instructions for assembling his net in the preface to the volume (pp. xlv-xlvi). An iron wire is bent into a hoop with a diameter of 13-14 pouces (approximately 33-35.5 cm.),



Figure 1. Réaumur's vignette of the insect collectors from t. 2 (1736) of *Mémoires pour servir à l'histoire des insectes*.

and the ends of the wire are bent outward and bound together so that the hoop can be attached to a cane or stick, either by tying the bound ends securely to the end of the stick "à volonté," or by the safer method of drilling the stick and pressing in the wires.

Thus far Réaumur's directions could apply equally to the construction of a simple modern amateur's net, but he means to improve upon the already well-known bag-net design. According to Réaumur, a wide ribbon of cloth is folded over the hoop and stitched (Fig. 2, A); then a loose circular piece of *réseau* or fine netting (Fig. 2, B) is sewn to the ribbon. In the center of this piece is an aperture through which the hand can be passed freely ("assez grande pour laisser passer la main librement"). To the circumference of the aperture is stitched a cylinder of gauze (Fig. 2, C), open at the other end but fitted with a ribbon so that it can be drawn tightly shut and secured.

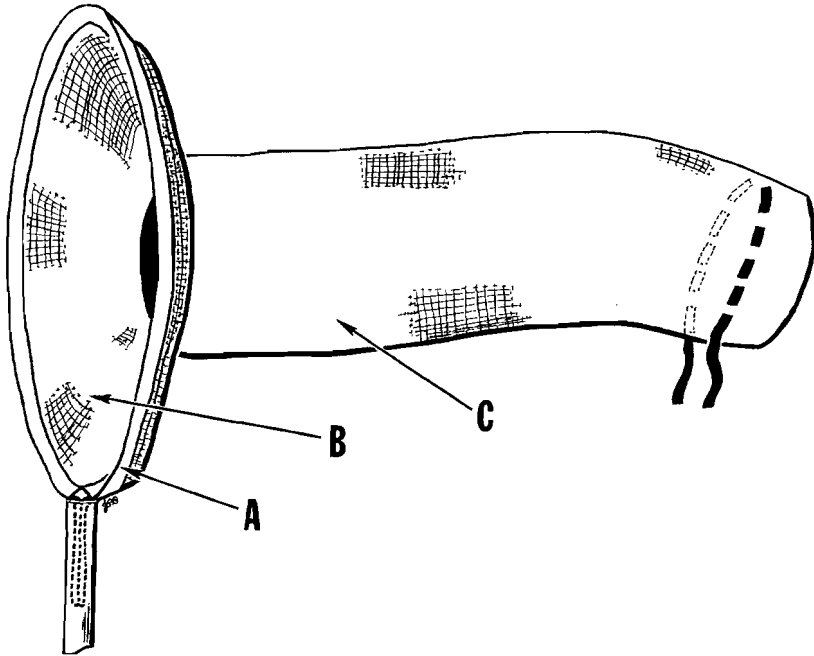


Figure 2. A, the hoop with its stitched cover; B, the loose circular piece of net; C, the net cylinder with ribbon, here untied. Drawing courtesy of Julian P. Donahue.

Réaumur explains the necessity for adding the gauze cylinder. If an insect is captured by covering it with the net, the creature might escape if the wire frame were lifted to admit the hand. The difficulty is solved by entering the net from the other end of the bag; "on prend à loisir & doucement le papillon; ainsi on conserve ses ailes avec toute leur fleur." Some experienced collectors, says Réaumur, are able to take insects on the wing; the net is brought quickly to the ground once the quarry is inside. The procedure of handling the net

is well illustrated in Fig. 1, and one of the collectors may be seen removing a butterfly from the bag.

A transcription of Réaumur's statement is easily made, but interpretation is not as simple. Knowledge of the European Lepidoptera had reached such a level in the late seventeenth century that nets must have been widely used by collectors, but the first evidence of such use does not appear until the end of the century (Wilkinson, 1966a). The first net used was apparently the bag-net, derived from the design used by fishermen. The earliest English statement found to date indicates that the pioneer lepidopterist James Petiver (*ca.* 1663-1718) was using a bag-net or later variant in the early eighteenth century, but we know that the cumbersome clap-net somehow gained popular approval in England (Wilkinson, 1966a, 1966b). However, this piece of fowler's apparatus did not replace earlier designs on the Continent. French, Dutch and German collectors used the bag-net, but evidently did not discover at once that if a deep net were used on the ring, an insect could be trapped inside quite easily by doubling the ring over the net as we do today. Réaumur's instructions, as well as scattered illustrations from the mid-eighteenth century, indicate that in this period many bag-nets were so shallow that proper capture could not be effected unless the wire frame of the net was held securely against the ground.

As the century wore on, Continental collectors chose to lengthen their net bags and pinch or pin trapped insects through the gauze rather than adopt Réaumur's elaborate cylinder tied with ribbon. By the third quarter of the century, French nets were fitted with bags two feet or more in depth, affixed directly to the hoop. The Réaumur net fell into disuse, becoming one of many discarded experiments in the pragmatic development of our modern collecting equipment.

[As this issue goes to press I have received photographs from my kind friend Dr. W. S. Bristowe, Whatlington, Battle, Surrey, England, of a much earlier style of Continental net. The illustrations, which show collectors in action, are from a Flemish MS. of "The Romance of Alexander," dated 1339-1344. They will be published by Dr. Bristowe in a forthcoming issue of *The Entomologist's Gazette* -- RSW.]

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