

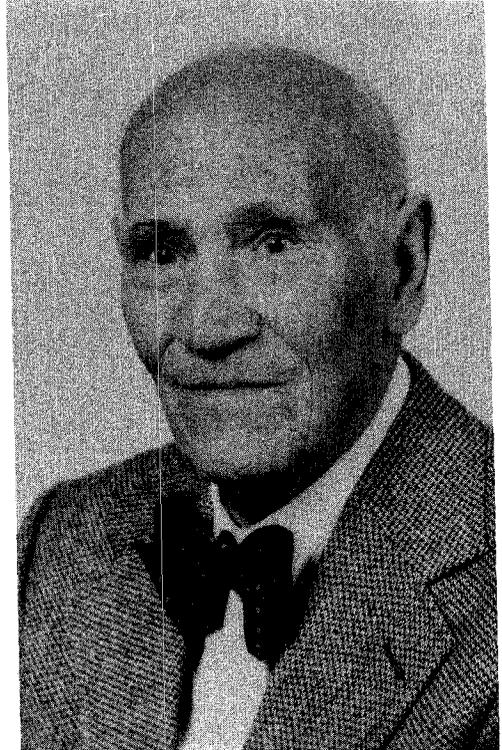
Heinrich Homann 1894-1993

Heinrich Homann, an honorary member of The American Arachnological Society, passed away on 26 July 1993, in his 100th year. Only a week earlier I had received a letter from him describing how honored he felt that R. F. Foelix's second edition of *Biologie der Spinnen* had been dedicated to him.

Homann was born on 8 March 1894 in Möringen, Lower Saxony. He studied zoology, botany, chemistry, physics and geology from 1912 to 1913 in Göttingen, from 1913 to 1914 in Munich, and after the war he was (1919 to 1921) in Göttingen. His zoology professors were R. Goldschmidt, O. Hertwig, A. Kühn and K. von Frisch. His doctoral thesis was a study of insect ocelli done with professors A. Pohl in physics and A. Kühn in zoology. From the time of his Ph. D. thesis he always had some working space in the Institute of Physics. At first he was assistant to Prof. Pohl; later he taught in a gymnasium (high school). He retired from teaching in 1959.

All of Homann's scientific work was done in his spare time from teaching. His main interests were eyes and vision. A casual observation, while collecting, of a moving retina in *Xysticus* led him to the study of eyes of spiders. He first studied the physiology, then the embryology, of eyes of several species, and eventually the internal anatomy of lateral and posterior median eyes (secondary eyes) of about 400 species. He used the results of these studies as the basis for the classification of spider families, and to affiliate uncertain subfamilies or groups of genera with some of the better known families. The simplest method of studying eyes, he found, was to clear spiders with methyl benzoate and study the arrangement of the tapetum, which remained opaque. This could be done without damaging the specimens. One of his findings was that the eyes of all Lycosoidea have a derived, grate-shaped tapetum.

Besides eyes, he investigated the mechanism of molting, measuring the spider's blood pressure before and during the molt with the simplest of instruments (the high pressures obtained were later verified in England using more elaborate equipment). Also, he showed that setae are necessary for the exuvia to slide off the appendages. He constructed a model leg of three wooden tubes, each 10 cm long and 2 cm in diameter, with air-



tight connections made of bicycle inner tubing, leaving 2 cm spaces between the wooden tubes. One end of the leg was sealed, the other end had two valves, one for adding air and the second permitting air to escape. When air was added, the inner tube joints bulged. Short pieces of watch spring were nailed to the wooden tubes as macrosetae. For the exuvium, the "leg" was loosely wrapped in paper. By rhythmically adding air, with intermediate pauses permitting air to escape, he caused the paper exuvium to slip off the leg. In one of his publications he reported the results of simple experiments demonstrating that certain spiders can walk up smooth surfaces because their scopula hairs cling to the thin water film on the surface of the substrate.

In 1968 Homann visited and stayed with us. He returned to America with his wife the following year, where he gave his first lecture in English to our Museum seminar.

Homann remained active and attended arachnology meetings until 1974 in Amsterdam. He published until 1985, at which time he was over 90. He continued to be interested in history, especially that of the second World War, and also in his contacts with individual arachnology students who came for visits.

Homann was fortunate to have escaped incapacitating illness. A few days before his death he fell and broke an arm bone. After returning home, before an expected longer stay at a convalescent home, he passed away suddenly when resting on a stair. His wife had died several years earlier.

Most of the notes here are from commentaries left by Homann himself and made available by his son, Prof. K. H. Homann. The photograph was supplied by his daughter, Barbara Wedepohl. Other notes come from Foelix's commemoration of Homann's 99th birthday (Arachnologische Mitteilungen 5:1-3).

LIST OF HOMANN'S PUBLICATIONS

1924. Der Vertikalilluminator als Augenspiegel bei kleinen Augen. *Biol. Zentralblatt*, 44:582-591.
1928. Beiträge zur Physiologie der Spinnenaugen. I. Untersuchungsmethoden. II. Das Sehvermögen der Salticiden. *Zeitschr. vergleich. Physiologie*, 7:201-268.
1931. Beiträge zur Physiologie der Spinnenaugen. III. Zur Abbildung im Auge. Das Sehvermögen der Lycosiden. *Zeitschr. vergleich. Physiologie*, 11:40-67.
1932. Die Optik der Facettenaugen im Versuch. *Zeitschr. Mathem. Naturwissensch. Unterricht.*, 63: 13-18.
1933. Was das Fischauge sieht. *Die Umschau*, 37: 516-519.
1934. Beiträge zur Physiologie der Spinnenaugen. IV. Das Sehvermögen der Thomisiden. *Zeitschr. vergleich. Physiologie*, 20:420-492.
1935. Die Funktion des männlichen Spinnentasters im Versuch. *Zool. Anzeig.*, 109:73-75.
1946. Über die Jugendform von *Micrommata viridissima* (Deg.) Araneae. *Biol. Zentralblatt*, 65:82-83.
1947. Beiträge zur Physiologie der Spinnenaugen. V. Der Lichtsinn von *Aranea sexpunctata*. *Biol. Zentralblatt*, 66:251-261.
1947. Die Nebenaugen der Spinnen (Araneae). *Zeitschr. Naturforsch.*, 26:161-167.
1949. Über das Wachstum und die mechanischen Vorgänge bei der Häutung von *Tegenaria agrestis* (Araneae). *Zeitschr. vergleich. Physiologie*, 31:413-440.
1949. Blutdruck und Häutung bei Spinnen. *Naturwissenschaften*, 36:21-24.
1950. Die Nebenaugen der Araneen, I. *Zool. Jahrb. (Anatomie)*, 71:56-144.
1951. Eine Spinne als Glazialrelikt. *Naturwissenschaften*, 38:101-102.
1952. Die Nebenaugen der Araneen. II. *Zool. Jahrb. (Anatomie)*, 72:345-364.
1952. Das Wachstum und die Häutung von *Tegenaria agrestis* (Araneae). *Trans. 9th Internat. Congr. Entomology*, 1:1075-1079.
1953. Der Bau der Nebenaugen als taxonomisches Merkmal der Spinnen. *Trans. 9th Internat. Congr. Entomology*, 2:358-361.
1953. Die Entwicklung der Nebenaugen bei den Araneen, I. Eusparassidae. *Biol. Zentralblatt*, 72:373-385.
1953. Die Spinnen in der Umgebung von Göttingen. Bericht der Felix-Klein-Oberschule in Göttingen zum Jahr 1952/53:1-8.
1953. Wachstum und Häutung der Spinnen. *Natur. und Volk*, 83:1-9.
1955. Die Entwicklung der Nebenaugen bei den Araneen. II. Thomisidae. *Biol. Zentralblatt*, 74:427-432.
1956. Die Entwicklung der Nebenaugen bei den Araneen. III. Salticidae. *Biol. Zentralblatt*, 75:416-421.
1957. Haften Spinnen an einer Wasserhaut? *Naturwissenschaften*, 44:318-319.
1959. *Agelena labyrinthica* (Araneae). Embryonalentwicklung. [scientific film]. *Institut für den wissenschaftlichen Film*, E 196/1958.
1961. Die Entwicklung der Nebenaugen bei den Araneen. IV. Lycosidae. *Zool. Jahrb. (Anatomie)*, 79: 347-370.
1961. Die Stellung der Ctenidae, Tetricinae und Rhoicininae im System der Araneae. *Senckenberg. biol.*, 42:397-408.
1966. Augen und Systematik bei den Araneae. (Arachnida). *Senckenberg. biol.*, 47:63-66.
1968. Die Stellung der Cyclocteninae im System der Araneen. (Arachnida: Araneae). *Senckenberg. biol.* 49:51-57.
1971. Die Augen der Araneae, Anatomie, Ontogenie und Bedeutung für die Systematik (Chelicerata, Arachnida). *Zeitschr. Morphol. Tiere*, 69:201-272.
1975. Die Stellung der Thomisidae und der Philodromidae im System der Araneae (Chelicerata, Arachnida). *Zeitschr. Morphol. Tiere*, 80:181-202.
1985. Die Cheliceren der Araneae, Amblypygi und Uropygi mit der Skleriten der Plagulae (Chelicerata, Arachnomorpha). *Zoomorphologie*, 105:69-75.
1985. Interferenzfarben an Spinnenaugen. *Biologie in unserer Zeit*, 15:90-91.

Herbert W. Levi: Museum of Comparative Zoology, Harvard University; Cambridge, Massachusetts 02138 USA.