This deviation is the adoption of an aquatic mode of life by the European fresh-water spider (*Argyroneta)* and by the marine spider *Desis,* which is found on the shores of the Indian and Pacific Oceans from Cape Colony to eastern Australia. *Desis* lives invariably between tide-marks upon the rocks and coral reefs, and may be found at low tide either crawling about upon them or swimming in tidal pools and feeding upon small fish or crusta- ceans. As the tide rises the spiders take refuge in crevices and spin over their retreat a sheet of silk, impervious to water, beneath which they lie in safety with a supply of air until the ebb exposes the site again to the sun. The fresh-water spider (*Argyroneta)* lives amongst the weeds of lakes and ponds and, like *Desis,* is quite at home beneath the water either swimming from spot to spot or crawling amongst the stems of aquatic plants. As a permanent home the spider makes beneath the surface a thimble-shaped web, with inverted mouth, anchoring it to the weeds. He then ascends to the surface, carries down a bubble of air and releases it inside the mouth of the silk-thimble, thus replacing a certain amount of water. This action is repeated until the domicile is filled with air, when the spider takes possession of it. The spider owes its name *Argyroneta* or the silver swimmer to its silvery appearance as it swims about under water enveloped in air, and its power to retain an envelope of air on its sternum and abdomen depends upon the circumstance that these areas are beset with hairs which prevent the water reaching the integument; but the air retained by these hairs can be released when the spider wishes to fill its subaqueous home with that element. *Argyroneta* feeds principally upon flies or gnats, which it seizes from below as they light upon the surface of the water. In the breeding season the male spins a bell or thimble near that of the female and joins the two by means of a silken passage. The female attaches her eggs to the inner wall of her own home, and the young when large enough to shift for themselves have the bell-making instinct fully developed. Since the adoption of an aquatic mode of life by *Desis* and *Argyroneta* involves no increased facilities in getting food, and merely substitutes for ordinary terrestrial enemies fishes and crustaceans in the former case, and fishes, amphibians, and insectivorous water-insects in the latter, the supposition is justified that the change in environment is due to the unre- mitting persecution of *Pompilidae* and *Ichneumonidae,* which would not venture to pursue their prey beneath the water’s surface. The habits of certain other spiders suggest the origin of the perfect adaptation to aquatic conditions exhibited by *Desis* and *Argyroneta.* The nature of the integument and its hairy clothing in all spiders enables them to be plunged under water and withdrawn perfectly dry, and many species, even as large as the common English house-spider *{Tegenaria),* are so lightly built that they can run with speed over the surface of standing water, and this faculty has been perfected in genera like *Pirata, Dolomedes* and *Triclaria,* which are always found in the vicinity of lakes or on the edges of rivers and streams, readily taking to the water or running down the stems of water plants beneath its surface when pursued. Some species of *Dolomedes,* indeed, habitually construct a raft by spinning dead leaves together and float over the water upon it watching for an opportunity to dash upon any insect that alights upon its surface.

Geologically, spiders date from the Carboniferous Period, *Arthrοlycosa* and others from the coal beds of Europe and North America being closely allied to the existing genus *Liphistius.* Remains of spiders from the Baltic amber beds of Oligocene age and from nearly coeval fluviatile or lacustrine deposits of North America belong to forms identical with or closely related to existing genera, thus proving the great antiquity of our present spider fauna. (R. I. P.)

**SPIELHAGEN, FRIEDRICH VON** (1829- ), German

novelist, was born at Magdeburg on the 24th of February 1829. He was brought up at Stralsund, where his father was in 1835 appointed government architect; he attended the gymnasium there, and studied law, and subsequently literature and philo- sophy, at the universities of Berlin, Bonn and Greifswald. On leaving the university he became a master in a gymnasium at Leipzig, but upon his father’s death in 1854 devoted himself entirely to writing. After publishing *Klara Vere* (1857) and *Auf der Dune* (1858), he obtained a striking success with *Proble­matische Naturen* (1860-1861), one of the best novels of its time; it was followed by *Die vοn Hohenstein* (1863), *In Reih' und Glied* (1866), *Hammer und Amboss* (1869), *Deutsche Pioniere* (1870), *Allzeit voran!* (1872), *Shirmflut* (1876), *Plattland (1878),Quisisana* (1880), *Angela* (1881), *Uhlenhans (1884), Ein neuer Pharao* (1889), *Faustulus* (1897) and *Freigeboren* (1900). Spielhagen’s best work was produced between the years 1860 and 1876; he wrote nothing after *Sturmflut* which can be compared with that power­ful romance. His novels combine two elements of especial power, the masculine assertion of liberty which renders him the favourite of the intelligent and progressive citizen, and the ruthless war he wages against the self-indulgence of the age. His love of the sea, derived from an early residence at Stralsund, introduces an element of poetry into his novels which is some­what rare in German fiction. Spielhagen’s dramatic productions, *Hans und Grete* (1868) and *Liebe für Liebe* (1875), and others, cannot compare with his novels. From 1878-1884 he was editor of *Westermann's Monatshefte.*

Spielhagen’s *Sämtliche Werke* were published in 1871 in sixteen volumes, in 1878 in fourteen volumes; his *Sämtliche Romane* in 1898 (22 vols.), and these were followed by a new series in 1902. See his autobiography, *Finder und Erfinder* (2 vols., 1890); also G. Karpeles, F. *Spielhagen* (1889), and H. and J. Hart, *Kritische Waffengänge* (1886).

**SPIESS, CHRISTIAN HEINRICH** (1755-1799), German writer of romances, was bom at Freiberg in Saxony on the 4th of April 1755. For a time an actor, he was appointed in 1788 controller on the estate of a certain Count Künigl at Betzdikau in Bohemia, where he died, almost insane, the result of his weird fancies, on the 17th of August 1799.

Spiess, in his *Ritter-, Räuber- und Geister-Romane,* as they are called—stories of knights, robbers and ghosts of the “ dark ” ages—the idea of which he borrowed from Goethe’s *Gotz von Berlichingen* and Schiller’s *Räuber* and *Geisterseher,* was the founder of the German *Schauerroman* (shocker), a style of writ­ing continued, though in a finer vein, by Karl Gottlob Cramer (1758-1817) and by Goethe’s brother-in-law, Christian August Vulpius. These stories, though appealing largely to the vulgar taste, made Spiess one of the most widely read authors of his day. The most popular was a ghost story of the 13th century, *Dαs Petermannchen* (1793); among others were *Der alte Überall und Nirgends* (1792); *Die Lowenritter* (1794), and *Hans Helling, vierter und letzter Regent der Erd- Luft- Feuer- und Wasser- Geister* (1798). Beside numerous comedies, Spiess wrote, antici­pating Schiller, a tragedy *Maria Stuart* (1784), which was in the same year performed at the court theatre in Vienna.

See Karl Goedeke, *Grundriss,* v. 506 sqq.; Müller-Fraureuth, *Die Ritter- und Räuberromane* (Halle, 1894).

**SPIKENARD, or** Nard **(O. Fr.** *spiquenard,* **Lat.** *spica nardi,* from *spica,* ear of corn, and Gr. *vαρδοs,* Pers. *nard,* Skt. *nalada,* Indian spikenard, from Skt, *nal,* to smell), a celebrated per­fume which seems to have formed one of the most durable aromatic ingredients in the costly unguents used by the Romans and Eastern nations. The ointment prepared from it (“oint­ment of pistic nard’’@@1) is mentioned in the New Testament (Mark xiv. 3-5; John xii. 3-5) as being “ very costly,” a pound of it being valued at more than 300 denarii (over £10). This appears to represent the prices then current for the best quality of nard, since Pliny (*Η.N.* xii. 26) mentions that nard spikes reached as much as 100 denarii per lb, and, although he does not mention the price of nard ointment, he states (xiii. 2) that the “unguentum cinnamominum,’’ a similar preparation, ranged from 25 to 300 denarii according to its quality. Nard ointment also varied considerably in price from its liability to sophistication (Ibid. xii. 26, 27; xiii. 2). The genuine ointment@@2

@@@1 The meaning of the word “ pistic ” is uncertain, some rendering it "genuine,” others “ liquid,” and others taking it for a local name.

@@@2 The use of alabaster vessels for preserving these fragrant unguents was customary at a very early period. Theophrastus (*c.* 314 B.c.) states that vessels of lead and alabaster were best for the purpose, on account of their density and coolness, and their power