which dropped to £4 in 1590. Bishop Morton incorporated Sunderland in 1634, stating that it had been a borough from time immemorial under the name of the New Borough of Wear­mouth. This charter lapsed during the Civil Wars, when the borough was sold with the manor of Houghton-le-Spring for £2851, 9s. 6d. Nevertheless the inhabitants retained their rights. Sunderland became a parliamentary borough returning two members in 1834. The charter of 1634 granted a market and annual fair which are still held. The charter of Bishop Hugh provided for pleas between burgesses and foreign mer­chants, and directed that merchandise brought by sea should be landed before sale, except in the case of salt and herrings. Bishop Hatfield gave a lease of the fisheries in 1358. In the 15th century commissions were held touching salmon-fisheries and obstructions in the Wear, while Bishop Barnes (1577-1587) appointed a water-bailiff for the port, and licensed the building of wharves for the sale of coal. During the 17th century Sunderland was the seat of a vice-admiralty court for the county palatine and in 1669 letters patent permitted the erection of a pier and lighthouse as the harbour was “ very commodiously situate for the shipping of vast quantities of sea-coles plentifully gotten and wrought there.”

See William Hutchinson, *History and Antiquities of the County Palatine of Durham* (Newcastle, 1785-1794) ; J. W. Summers, *History and Antiquities of Sunderland* (Sunderland, 1858); *Victoria County History. Durham.*

**SUNDEW,** in botany, the popular name for a genus of plants known as *Drosera* (Gr. *δρθοσoς*, dew; Fr. *rossolis,* Ger. *Sonnenthau)* so called from the drops of viscid transparent glittering secretion borne by the tentacles which cover the leaf-surface. It is a cosmopolitan genus of slender glandular herbs, with leaves arranged in a basal rosette or alternately on an elongated stem, and is represented in Britain by three species, which are found in spongy bogs and heaths.

The common sundew (*D.* *rotundifolia)* has extremely small roots, and bears five or six radical leaves horizontally extended in a rosette around the flower-stalk. The upper surface of each leaf is covered with gland-bearing filaments or " tentacles,” of which there are on an average about two hundred. Each gland is surrounded by a large dew-like drop of the viscid secretion. A small fibro-vascular bundle (&, fig. 3, B), consisting mainly of spiral vessels, runs up through the stalk of the tentacle and is surrounded by a layer of elongated parenchyma cells outside of which is the epidermis filled with a homogencous fluid tinted purple by a derivative of chlorophyll (eryhrophyll). The epidermis bears small multicellular prominences. The glandular head of the tentacle contains a central mass of spirally thickened cells (tracheids) in immediate contact with the upper end of the fibrovascular bundle. Around these is a layer of large colourless thin walled cells which reaches the surface at the base of the bead and acts as absorbing cells. Outside these are two layers (the outer one the epidermis) filled with purple fluid.

Insects arc attracted by the leaves; **a** fly alighting on the disk, or even only touching one or two of thc exterior tentacles, is immediately entangled by the viscid secretion; the tentacles to which it is adhering begin to bend, and thus pass on their prey to the tentacles next succeed­ing them inwards, and the insect is thus carried by a curious rolling movement to the centre of the leaf. The tentacles on all sides become similarly inflected; the blade or the leaf may even become almost cup-shaped; and the insect, bathed in the abundant secretion which soon closes up its tracheae, is drowned in about a quarter of an hour. The leaves clasp also, but for a much shorter time, over inorganic bodies.

The bending of the tentacle takes place near its base, and may be excited (1) by repeated touches, although not by gusts of wind or drops of rain, thus saving the plant from much useless movement; (2) by contact with any solid, even though insoluble and of far greater minuteness than could be appreciated by our sense of touch— a morsel of human hair weighing only 1/78740 of a grain, and this largely supported too by the viscid secretion, sufficing to induce movement ; (3) by the absorption of a trace of certain fluids, mostly nitrogenous. During the inflexion of the tentacle, and even before it touches the stimulating object, the secretion of the gland increases in quantity, and, instead of remaining neutral, becomes acid. The secretion contains a digestive enzyme which renders soluble the nitrogenous substances of the insect’s body; these are then absorbed through thin-walled cells at the base of the gland. After absorp­tion the tentacles recurve and the leaf assumes its normal appearance.

Closely allied to *Drosera* is *Drosophyllum lusitanicum,* which catches stich vast numbers of flies in a state of nature that the Portuguese cottagers call it the fly-catcher, and hang up branches of it in their houses for this purpose. Its long narrow leaves are thickly covered with stalked glands, which resemble in the main the tentacles of *Drosera,* save in that they are incapable of movement, and that the secretion is less viscid and freely leaves the gland to wet the insect, which, creeping onward, soon clogs its wings and dies. There are, moreover, many minute colourless sessile glands, which, when stimulated by the absorption of nitrogenous matter, excrete an acid digestive secretion similar to that of the sundew, by means of which the body of the captured insect is digested and absorbed.