

found. Each lot should be kept separate and numbered. A brief record under the same number on a field card or in a note book should be made. If the shells are stained they may be cleaned by placing them in a bottle containing sharp sand and soapy water. On no account should an acid be used. By rotating the contents the shells will be cleaned on the outside. Mere drying out then suffices, when the shells are minute; but when large, the animals must be removed after boiling, or rendered innocuous by immersion overnight in a five to one dilution of formalin—by far the more rapid process, as the tying or wrapping of each shell is not then necessary. When thoroughly dried, after treatment with formalin, the largest shells will not gape, or cause offence by their odor, and may be placed in the collector's cabinet.

As he examines his specimens he will observe that they fall naturally into three groups or genera. By far the greater number ordinarily found are minute shells, triangular in outline, very unequilateral, and, with rather sharp terminal beaks. They resemble small peas, and belong to a genus fittingly called *Pisidium*.

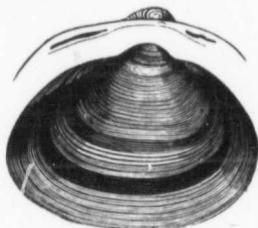


Fig. 1

*Sphaerium sulcatum*  $\times 1\frac{1}{2}$ .<sup>3</sup>

Other shells will be noticed which are larger, less inflated, though never exceeding half an inch in length; and usually more delicate and fragile. They bear little caps on the beaks, separated from the aftergrowth by a distinct furrow, and form the genus known as *Musculia*.

Still larger shells, often adorned with distinct color bands, denoting periods of arrested development, and others of no greater size than some *Musculia*, but of heavier texture, and as a rule more deeply striated, bear *Sphaerium* as their generic name. The term was devised by Scopoli, an Italian naturalist and chemist in 1777. It has priority to *Cyclas* (Brugaiere, 1789); and *Sphaeriidae*, according to the laws of modern zoological nomenclature has replaced *Cycladidae* as the proper designation of the family to which the little mussels belong.

<sup>3</sup>For this and the other figures in the text I am under the greatest obligation to my friend Dr. Bryant Walker of Detroit, Mich.

1. *SPHAERIUM SULCAIUM* Lamarck, the largest of the genus in the species most commonly observed in the vicinity of Ottawa. It was described in 1816 by the famous French naturalist in his "*Animaux sans Vertèbres*," from specimens obtained in Lake Champlain. In the same year Thomas Say described the shell in the American edition of Nicholson's Encyclopedia as *Cyclas similis*, and Say's name may have priority. However, the Lamarckian name is more generally adopted, and is that used in the Club's lists.

*S. sulcatum* is the largest of the genus. It is oval in outline; distinctly, rather than deeply, striate; and, when adult, is usually banded with concentric dark lines, marking periods of arrested development such as occur every winter. The body color is of varying shades of grey or brown. Young shells are almost white.

But one other species, restricted in Canada, so far as known, to a single locality near Ottawa, approaches this in size. All bivalves found elsewhere that are about three-quarters of an inch in length, and have not the corrugated beaks which indicate membership in the family of our large mussels, or *Unionidae*, may safely be named *Sphaerium sulcatum*.

This species is found in many places within the city limits. It is common in the Rideau river, especially on the muddy bottom of the reach above the islands at Billings' Bridge. In the canal, after the water has been let out, it may be easily collected on the shoal near the right bank west of the Bronson avenue bridge, and anywhere above Hartwell's locks. Very large and perfect shells were obtainable at one time in the bay at the east end of the small lake below the outlet of Meach lake; but owing to accumulations of sawdust and bark the locality is now barren of this shell, though it still produces sparingly the most remarkable specimens I have ever seen anywhere of *Anodonta cataracta* Say (= *fluviatilis* Dillw.) and, in addition, *Lymnaea megasoma*, and the shell called *Physa lordi* in our lists.

In the Laurentides, north of Meach lake, *S. sulcatum* abounds, as in Gauvreau lake and its outlet, near Ste. Cecile de Masham, and in the brook flowing past the orchid swamp still farther north, so well known to members of the botanical branch of the Club, and now, alas! to many others. What a day that was, nearly thirty years ago, when, after visiting the brook and its outlet, Fletcher, Harrington and the writer were the first naturalists to discover the sequestered glades where the shy wood nymphs, then literally in thousands, swayed to one another in virgin grace and loveliness! Whoever studies shells should have a mind receptive to the