

**BARK AND SCLEREID STRUCTURE
 IN DRIMYS PIPERATA HOOK.**

Drimys and other genera of Winteraceae have attracted the attention of several plant anatomists since the wood is vesselless and the reproductive structures show a series of primitive tendencies¹⁻⁴. Occurrence of bundle caps and groups of thick walled stone cells mixed with a few fibres is recorded in the case of winter bark, which is of medicinal importance belonging to *D. winterii*.^{5,6} While studying the bark structure in *D. piperata*, regular sclereids, in addition to stone cells are observed. In view of the importance of this taxon, the bark and sclereid structure is briefly reported here.

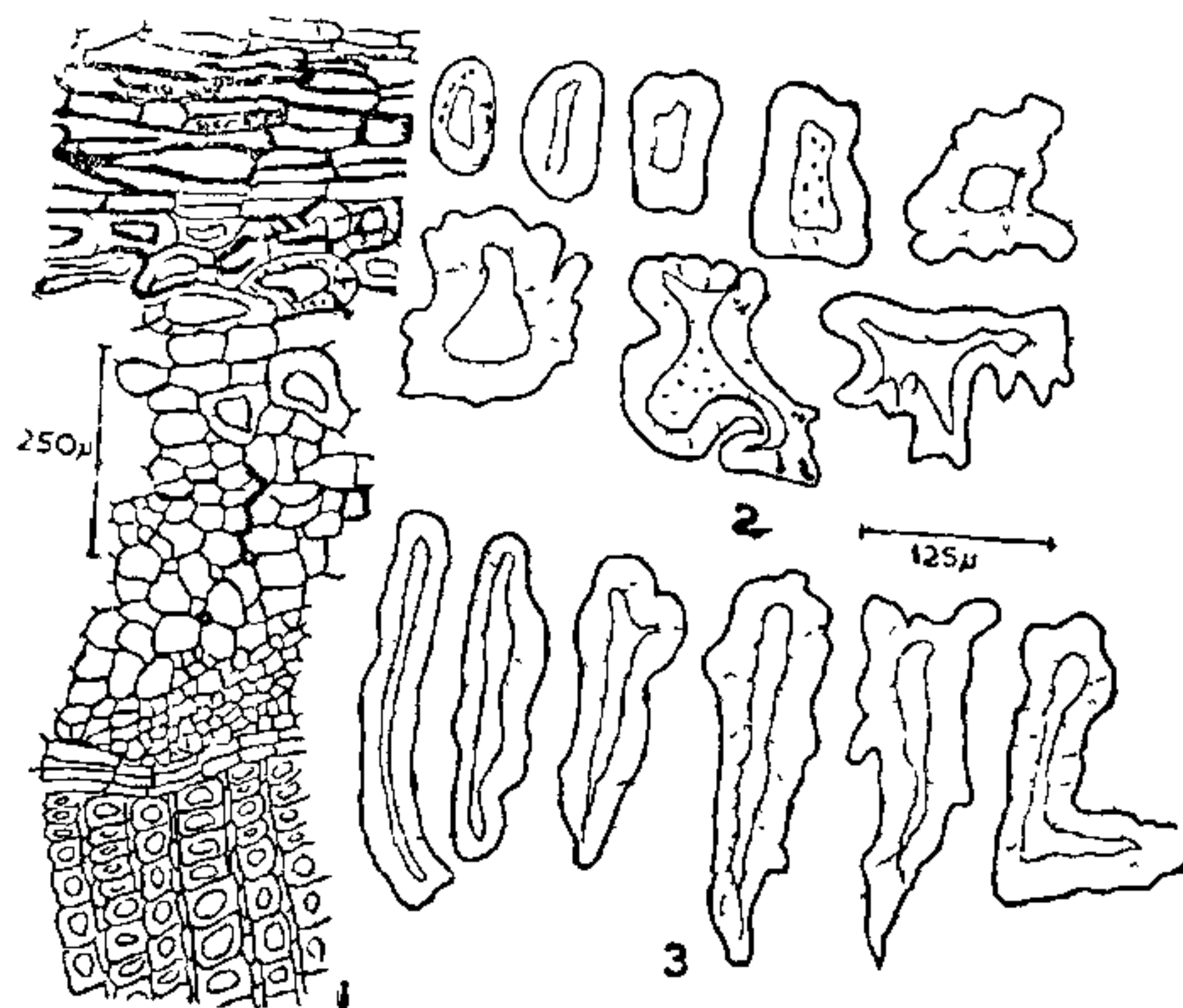
D. piperata, the only Asiatic species, occurs in Philippines, Borneo and Celebes⁷. The material for the present study was collected in the mossy forests of Mt. Kinabalu at 10,500 ft. and the plants are easily identified by their aromatic leaves with red petioles⁸. Customary methods were followed to obtain sections and macerations⁹.

The bark surface is smooth, ash grey in colour and 2-3 varieties of lichens grow on the stems. As seen in transections, the outer bark consists of 10-12 layers of cork cells whose cell walls show uniform thickening and the layers are evenly arranged. Tannin and other cell contents are commonly present. Inner to the cork region, there are 3-4 layers of large, thick walled scleried cells. Both these regions organise the outer bark. Following the sclereid zone is the parenchymatous region that forms the inner bark and inner to this secondary phloem, vascular cambium and secondary xylem are distinctly seen (Fig. 1).

As seen in the macerated preparations the majority of the sclereids (nearly 60%), belong to brachysclereid type and the cell shape is variable (Fig. 2). The bigger sclereids have an undulating outline due to small, round outgrowths at different points. Based on 100 measurements, they are, on an average, 85 μ long, 43 μ wide at the broadest region of the cells and the range being 110 \times 65 μ to 55 \times 33 μ . Majority of the sclereids possess thick lamellated wall with simple pits, some of them branched.

The second type of sclereids is basically elongated, with one end being wider than the other (Fig. 3). Small outgrowths are common. On an average they measure 187 μ long and 57 μ wide, the range being 264 \times 88 μ to 154 \times 44 μ . Irrespective of the variations in their shape, the sclereids show thick lamellated wall with simple pits and distinct cell lumen. A few of them show L or V-shaped outline, with one arm being shorter than the other. These are the idiosclereids similar to those reported in other taxa¹⁰⁻¹³. Essentially the sclereid cell displays a linear outline, gradually tapering towards one end

with a few outgrowths. The foliar sclereids are reported in species of *Bubbia*, *Drimys* and *Trochodendron*. In the first two genera they are polymorphic and mostly conform to astrosclereid type⁶. In *Trochodendron* both fusiform and ramified types are common¹⁴. The idiosclereids described presently in *D. piperata* are distinctly different from the above types.



FIGS. 1-3. *Drimys piperata*. Fig. 1. T.S. bark showing the outer bark with sclereid zone, inner bark, secondary phloem and xylem with vascular cambium in between. Figs. 2, 3. Branched and idiosclereids showing variations in cell size and form, arranged in increasing order of complexity.

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