

mixed with what appeared to be streaks of oil. However, the oils had been perfectly incorporated before the glycerin had been added; also, previous experiences had taught that alcohol and some other liquids would not mix with lanolin until diluted with sufficient water. Hence, a fluid ounce of water was added and well stirred in, when the mass became a perfectly smooth cataplasm.

### A RECENT BUCHU ADULTERATION.

R. B. HARVEY.

Commercial lots of Buchu recently appearing on the market have been adulterated by the addition of small amounts of foreign leaves. Although present to the extent of only three or four percent, the intense astringency and bitterness of the leaves of this new adulterant make it especially objectionable.

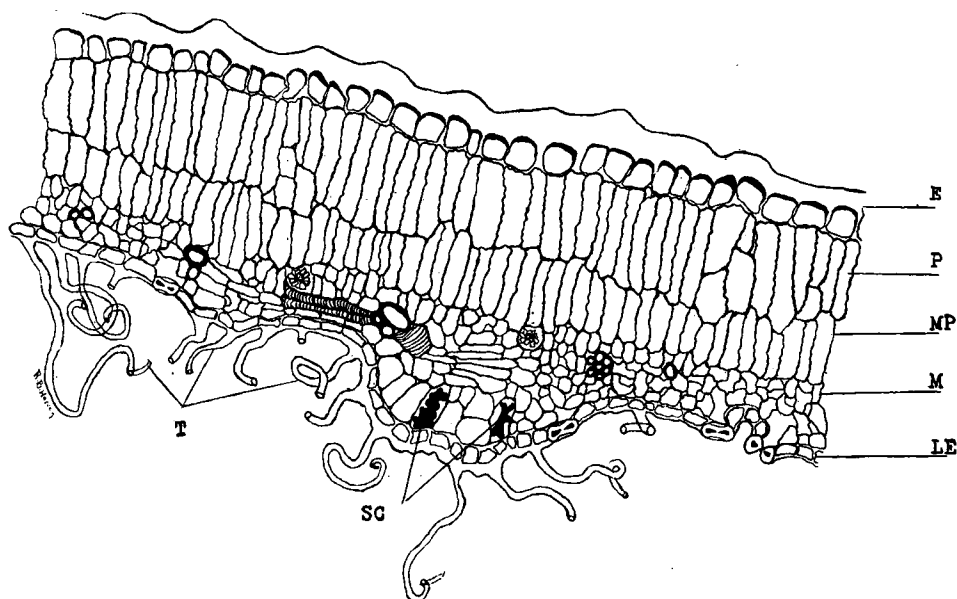


FIG. 1.

As no flowers or other diagnostic features were found, the botanical source of the leaves has not been determined, but they are probably derived from some shrub growing in the same locality as Buchu.

The leaves of the adulterant are somewhat darker in color than Buchu and of a different shape. They are oblong, lanceolate, 10-20 mm. long and 3 to 8 mm. wide with acute apex and obtuse base. They are also much thicker than Buchu, the average being about  $\frac{1}{2}$  mm. The upper surface of the leaf is olive green, glabrous, and finely reticulate; the under surface, somewhat lighter in color and minutely tomentose. The margin is entire and revolute, and the texture, coriaceous.

In cross section, the leaf of the adulterant (Fig. 1) shows a structure considerably different from that of Buchu (Fig. 2). The upper epidermis (E) of the adulterant is made up of thick walled cells, the outer part being 24-30

microns thick, striate, and unevenly papillate. No hypodermis corresponding to that of Buchu (HD) is found. The palisade layer (P) is made up of cells 90 microns long, and is followed by a layer of palisade-like mesophyll cells (MP) somewhat shorter than the first layer, and then by a mesophyll of spongy parenchyma (M). The lower epidermis (LE) is made up of comparatively small cells with moderately thickened walls. To this layer, long tubular and

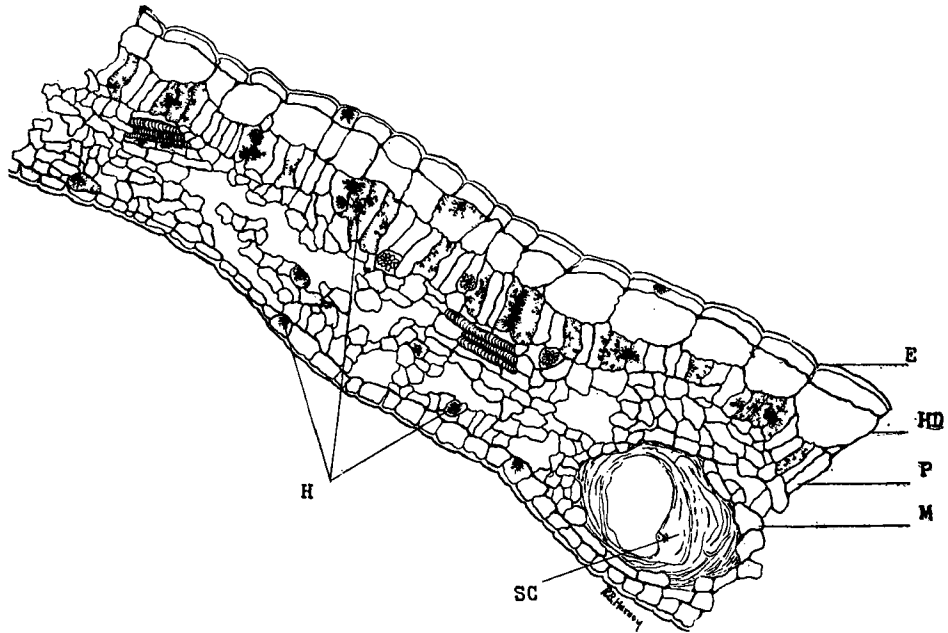


FIG. 2.

unicellular trichomes (T) are attached. These are intertwined and matted together and average 6 microns in diameter by about  $\frac{1}{2}$  mm. long. A few brown secretion cells (SC) are found in the cross section but no hesperidin crystals (H) are shown. In powdered form the adulterant may be detected by the upper epidermis which has much thicker walls than those of Buchu, and by the unicellular trichomes which are everywhere in evidence.

BOTANICAL DEPARTMENT, ELI LILLEY & Co., August 5, 1913.

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## PHYTOCHEMISTRY IN AMERICA.\*

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### III. WILLIAM THEODORE WENZEL.

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NELLIE WAKEMAN.

It is so unusual to find a man who has not only lived his allotted three score years and ten, but has rounded out and passed a full four score and is still doing productive work, especially along scientific lines, that the mere existence of

\*Nos. one and two under this caption have likewise emanated from the pen of Miss Wakeman, both sketches having appeared in the *Pharmaceutical Review* in 1908:

I—Helen Cecilia De Silver Abbott, *Ph. Rev.*, 26, p. 151.

II—Henry Trimble, *Ph. Rev.*, 26, p. 338.