

were produced by the extract to which the small amount of alcohol had been added, as were produced by the plain extract.

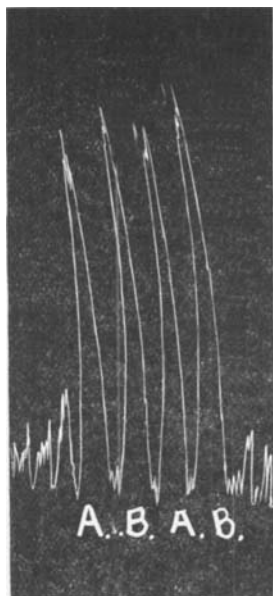


FIG. 1.—Shows that small amounts of alcohol do not influence the activity of liquor hypophysis upon the isolated uterus. A.—0.025 mil liquor hypophysis. B.—0.025 mil liquor hypophysis to which has been added 0.05 mil alcohol.

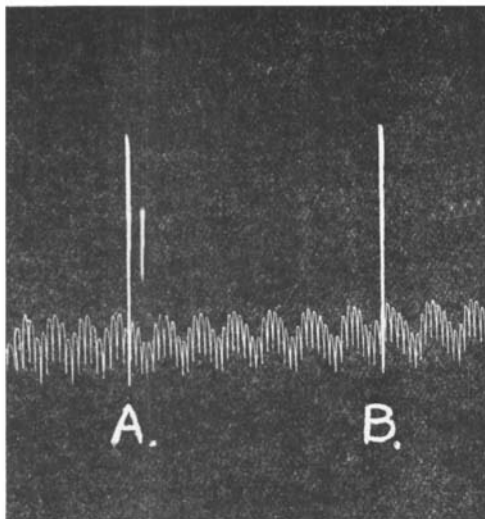


FIG. 2.—Shows that small amounts of alcohol do not influence the effects of liquor hypophysis upon the blood pressure. A.—0.2 mil liquor hypophysis. B.—0.2 mil liquor hypophysis to which has been added 0.05 mil alcohol.

Conclusion.—Small amounts of alcohol do not destroy the physiologic activity of *Liquor Hypophysis*.

PHARMACODYNAMIC LABORATORY,
H. K. MULFORD CO.,
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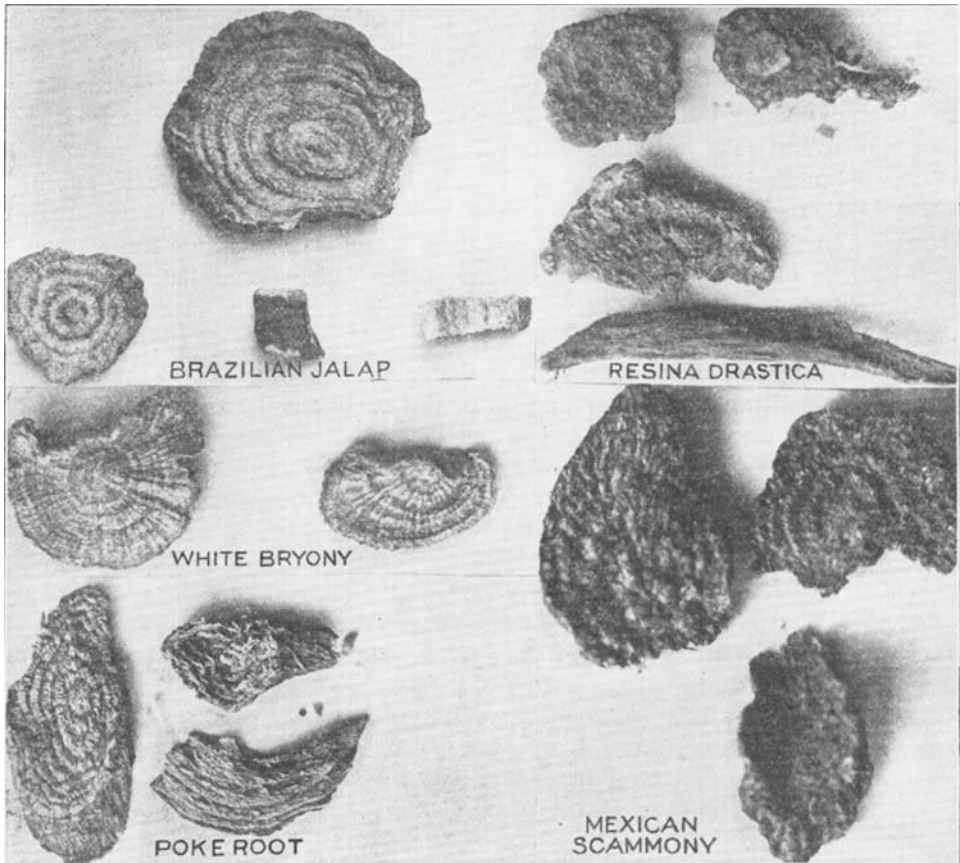
BRAZILIAN JALAP AND SOME ALLIED DRUGS.*

BY OLIVER ATKINS FARWELL.

In the *Pharmaceutical Journal* for November 27, 1915, Mr. E. M. Holmes described a root known as Brazilian Jalap, which he refers to the *Piptostegia Pisonis* Mart. This species was described by Martius in his *Systema Materia Medica Braziliensis*, page 78, in 1843. In addition to this and the typical species, *P. Operculata* Reichb., Martius described and listed *P. Gomesii*. In the *Flora Braziliensis* Meisner reduced the latter to the limbo of synonymy, placing it under *Operculina Convolvulus* but made no mention of *P. Pisonis*; since this so-called species was not mentioned in the *Flora Braziliensis*, the inference to be drawn therefrom is that it was thought to be invalid, just a synonym of *O. Convolvulus*. At different times this species has been included under *Convolvulus* or *Ipomoea*, but at present it is considered to constitute a genus distinct from either, the oldest

* Read before Scientific Section, A. Ph. A., Chicago meeting, 1918.

name for which is *Operculina*. If my deductions as above outlined are correct the proper binomial for the Brazilian Jalap is *Operculina macrocarpa* (Linn.) Urban. The names under which this drug is commonly known in Brazil are *Batata de Purga* and *Batata purgante*. *Tapioco de Purga* is a product derived from the root. The generic characters of *Operculina* are the pear-shaped calyx, large imbricated sepals chartaceous in fruit, broadly campanulate corolla tube, and the twisted anthers. The plant is a climbing shrub with winged stems, palmately 3-7-divided leaves,



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peduncles about as long as the leaves and white campanulate flowers. Mr. Holmes described the root as follows:

"The root occurs in commerce in the form of transverse circular sections averaging about $1\frac{1}{2}$ -2 inches in diameter, and about $\frac{1}{4}$ inch in thickness, marked with several concentric rings, and, save for its pale grayish brown tint and the presence of numerous dots of translucent pale resin on the surface, bears considerable resemblance to White Bryony root."

An effort was made to obtain a small supply of the root; in due course of time it was procured from London. It agreed in all points with the description quoted above. We may add, however, that it has a thin dark brown or blackish brown

cork, the surface is not fibrous, and that the phloem and cambium are shrunken below the surface of the xylum and cortex; that its resemblance to the cross-sections of Mexican Scammony or of Poke is as equally, if not more, pronounced as to that of White Bryony.

The root probably is a large tuberous root and is composed chiefly of soft tissues. The cambium forms complete circles and together with the phloem are, in the commercial drug, noticeable as dark concentric circles shrunken a little below the level of the surrounding tissues. In the sections observed, the tissues were all of secondary growth; that is, spiral or annular tracheae usually associated with primary meristem could not be detected. The center of the root in the smaller sections is nearly solid xylum, there being four narrow strands of secondary cortex, thus making the structure of the root a tetrarch. The larger sections are very similar but may have less xylum and more cortex. The cambium of the collateral bundles soon ceases its activity and the cortex gives rise to another meristematic region beyond the phloem and this operation is continued repeatedly, producing in this unusual way its growth in thickness. The xylum forms a very small bundle of few vessels and these are rather widely separated, forming an interrupted circle with wide spaces between the bundles. The medullary ray is usually one cell, sometimes two cells, in width. The vessels of the bundle are reticulated tracheae, often 0.13 mm. in diameter with walls 0.008 mm. thick, and these constitute the greater portion of the strengthening tissue of the root; tracheides and wood fibers are frequent in the central circles but absent or only occasional in the outer ones. Rosette crystals of calcium oxalate are frequent just internal to the cork, scattered through the cortex, and form crystal fibers close to the xylum. Starch is present only in a very small amount; the grains are simple and range from 0.002 mm. to 0.024 mm. in diameter. Bast fibers are absent or at least were not detected; but most of the bast parenchyma and some of the cells of the medullary rays and secondary cortex, while retaining comparatively thin walls, are stained brown with chloro-iodide-of-zinc, indicating suberization or cutinization. The cells of the cortex are more or less polygonal and average about 0.044 mm. in diameter, the walls are thin and the air space between the cells is very small. The cork layer is about 0.123 mm. thick and is composed of a series of thin-walled, more or less tabular cells (0.008 mm. by 0.048 mm.), only the outermost series having thickened cell walls. The tracheides average about 0.44 mm. in length, 0.026 mm. wide, and have a wall about 0.003 mm. in thickness. The wood fibers have oblique pores and range from 0.62-0.78 mm. in length, 0.013-0.020 mm. wide, and have a lumen varying from $\frac{1}{5}$ - $\frac{3}{4}$ the width of the fiber.

RESINA DRASTICA.

The drug that has come to us under this name is of unknown origin. It comes in both transverse and longitudinal sections of the root, the color is a dirty brown or dark grayish brown, much darker than the Brazilian Jalap. In the cross-sections the wood strands project as much as 2 mm. beyond the surface giving a rough fibrous aspect to the section; the bundles are irregularly scattered through definite concentric zones. In the longitudinal sections the strands appear on the surfaces as smooth ridges in more or less parallel but interrupted lines and frequently extend beyond the end of the section as coarse fibers up to 3 cm. in length

and 3 mm. in thickness. From the general resemblance of this root to that of Brazilian Jalap and to that of Mexican Scammony, I would hazard the guess that it is from some plant closely allied to them and consequently from the morning glory family, the *Convolvulaceae*.

W. L. Scoville, who is working out the chemistry of the drug, has informed me that in so far as he can tell from the limited amount of work he has been enabled to give to it, it does not differ materially from the resin of Mexican Scammony except in its yellow color. Under the microscope the root structure differs from the Brazilian Jalap in having no rosette crystals or crystal fibers, in having a superabundance of starch, the grains being of a more uniform size of from 0.013 mm.—0.018 mm., the vessels being chiefly of the pitted type, wood fibers are plentiful and there is some bast fiber. In Brazilian Jalap, oil with refractive inclusions, perhaps oleoresin, was scarce and where present was arranged in masses, rather than in drops, in longitudinal lines, mostly in connection with the medullary ray cells; but most of the cells of the samples I had for examination were empty, while on the other hand in the *Resina Drastica* samples the cells were well filled with the products of metabolism and as in the case of the starch there was a superabundance of large drops of oil with its inclusions throughout the cortex. Wood fibers in this drug measure for the most part from 0.704 mm. to 0.892 mm. in length, about 0.02 to 0.03 mm. wide, the lumen being about $\frac{1}{3}$ the width of the cell.

MEXICAN SCAMMONY.

This drug is derived from the large tuberous roots of *Ipomoea Orizabensis* (Pell) Ledenois and is also known as Male or Orizaba Jalap. It resembles very closely the drug described above as *Resina Drastica*, but is somewhat lighter in color, extremes being as light on one hand as the Brazilian Jalap and as dark on the other as *Resina Drastica*; it is as fibrous as the latter but the strands usually are finer, sometimes longer, more numerous, and arranged more regularly in concentric circles or zones. Under the microscope it differs in no tangible way from the *Resina Drastica*. The resin obtained from this is black; whether or not the difference in the colors of the resins of this and of the *Resina Drastica* can be correlated with specific difference in the plants producing them can not now be determined.

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PIPTOSTEGIA ROOT, PIPTOSTEGIA PISONIS MART., SO-CALLED "BRAZILIAN JALAP."*

BY CLARE OLIN EWING AND JOSEPH F. CLEVINGER.

An importation recently offered for entry as "Jalap" proved, upon investigation, to be the root of *Piptostegia Pisonis* Mart., which Holmes¹ refers to as "the ordinary jalap of Brazil." We are also in receipt of a personal communication from Mr. H. M. Curran, a forester in Brazil, in which he quotes a Bahai druggist

* Contribution from Pharmacognosy Laboratory, Bureau of Chemistry, Department of Agriculture, Washington, D. C.

¹ "Brazilian Jalap," *Pharm. J.*, 95, 671 (1915).