It will be noted that the ash yield of the freshly prepared stipes from the Minnesota drug was somewhat higher than the present allowance of 3 percent. One entire plant was used for this work. The stipes were not as large and fleshy as those usually obtained in commerce. The species represented by the Minnesota drug was *marginalis*. The ash yield of the old samples of commercial drug would indicate that the present standard is satisfactory. The high total and acid-insoluble ash of the scrapings and cleanings indicates the need for care in removal of outer portions during the preparation of the drug. The high acid-insoluble ash of the samples of Osmunda sold as Aspidium clearly indicates the desirability of an acid-insoluble ash standard for this drug. The very nature of the Osmunda rhizome makes the careful cleaning of it a rather difficult and tedious process. It appears that the normal ash of Osmunda is about 2 percent.

If supplies of Aspidium can be obtained, further studies will be made not only on the ash, but also in the filicic acid content.

TOTAL AND ACID-INSOLUBLE ASH OF ASPIDIUM DETERMINATIONS—BY C. H. ROGERS AND C. W. FOLKSTAD.

No.	Remarks.	Percent Total Ash.	Percent Acid-insoluble Ash.
1.	Aspidium, powdered, old commercial sample	2.80	0.36
		2.76	0.27
2.	Aspidium, whole, commercial, old, powdered in this laboratory	2.69	0.67
		2.64	....
3.	Aspidium, whole, commercial, old, powdered in this laboratory	2.64	0.50
		2.62	0.32
4.	Osmunda, sold for Aspidium, powdered in this laboratory	4.06	2.29
		4.20	....
5.	Osmunda, sold for Aspidium, powdered in this laboratory	3.38	2.31
		3.36	2.28
6.	*Dryopteris marginalis*, peeled stipes, Minnesota grown plant	3.95	0.12
		3.79	0.09
7.	*Dryopteris marginalis*, whole stipes, not peeled, from Minnesota grown plant	4.18	0.67
		4.17	0.61
8.	*Dryopteris marginalis*, peelings from stipes, Minnesota grown plant.	4.17	0.50
		4.18	0.50
9.	*Dryopteris marginalis*, scrapings and cleanings from Minnesota grown stipes	8.31	4.57
		8.51	....
10.	*Dryopteris marginalis*, roots from one plant, Minnesota grown	3.21	0.46
		3.15	0.21

DEPARTMENT OF PHARMACOGNOSY,
COLLEGE OF PHARMACY, UNIV. OF MINN.

THE STABILITY OF CHURCHILL'S TINCTURE OF IODINE.*

BY JOSEPH L. MAYER.

Solutions of iodine in alcohol are very unstable and as a result the U. S. P. tincture of iodine contains potassium iodide which very effectively prevents decomposition.

About two years ago, we had a query submitted to us as to whether Churchill's tincture of iodine made according to the N. F. formula with only 3.3 grammes

*Read before New York State Pharmaceutical Association, June, 1921.

potassium iodide to 16.5 grammes of iodine per 100 Cc. was subject to decomposition. In view of the fact that the U. S. P. tincture of iodine contains 5 grammes of potassium iodide to 7 grammes of iodine per 100 Cc. it was contended that there is insufficient potassium iodide in Churchill's tincture of iodine to prevent decomposition and, therefore, a preparation which had been made for a time, would upon analysis show a shortage of free iodine.

A search of the literature failing to show any data on the subject, I reassayed an old laboratory sample in order to have facts upon which to base an opinion. Recently, I made another analysis of this same sample, the results of all analyses being as follows:

Date of Analysis.	Iodine. Gm. per 100 Cc.	Potassium Iodide. Gm. per 100 Cc.
December 17, 1914.	16.0211	3.9941
April 26, 1919.	16.0198	3.9800
May 18, 1921.	15.9110	3.9940

These results prove that Churchill's tincture of iodine is a stable preparation, there being no loss of free iodine after six and one-half years.

RESEARCH AND ANALYTICAL LABORATORIES OF THE
LOUIS K. LIGGETT COMPANY, NEW YORK.

FRUIT AND ITS FUNCTION IN THE HUMAN ECONOMY.

BY R. A. KUEVER.

One of the wise provisions of nature is to protect the various parts of the human body in a careful and interesting fashion. The eye, for example, is protected by a bony structure practically surrounding it. The heart is not only protected by bony tissue to ward off blows, but by a set of muscles created largely for that purpose. Men who frequently engage in fistic encounters develop these muscles by exercise to withstand the more vigorous blows. The brain is protected by a veritable strong box of bone. So resistant is this box, commonly known as the skull, that it will withstand some surprisingly vigorous blows. It is not an uncommon occurrence for people to fall great distances, lighting on their heads, and yet sustain no permanent injuries. Only recently an unusual case is reported from Merrimac, Alabama: A man, who is at the hospital recovering, was kicked on the head by a mule. The animal was so seriously crippled by the impact that it was immediately shot. This, no doubt, is an extreme case, but it goes to show how well nature does protect.

The most interesting protection nature provides for the body is the fluids which bathe the various parts—the kidneys, the heart, the lungs, the stomach, the bowels; in fact, every organ. The teeth, the mucous membrane of the throat, the eye, the vocal cords, and the delicate cells of all the tissues are protected by these ever-present fluids.

Ninety-three percent of the body is water of which these protecting fluids are very largely composed. Only traces of proteins and mineral salts are found in them. Nature has provided and arranged this wisely and these fluids contain precisely what the tissues need to protect and, in many cases, nourish them. Without these fluids the various parts of the body would soon cease to function. With one or more of the constituents missing, their protecting power would be greatly impaired, if not entirely destroyed.