average will probably be from fifteen to twenty. Samples of spent English earth have been sent to the writer containing as high as twenty-four per cent. of oil and it can be seen at once that this is no small part of the cost of the process. American earths are reported to generally absorb too much oil. The reason is really the same as causes difficult filtration, for where slimes are formed they hold much oil mechanically.

As has already been stated certain fuller's earths cause a very vigorous oxidation to take place in the oil with which they are saturated on exposure to air. The action is so intense that the mass sometimes catches fire as soon as the presses are opened. At other times it takes place later in the waste piles of spent earth. The English earth is without this trouble and this property if well marked would naturally condemn any material. No reason can be assigned why one earth should have this property more than another. The fact simply remains and must always be reckoned with.

Most American earths give a decided taste and rancid or oxidized odor to oils, and this increases with the temperature used. With lard or lard oil this is a serious matter, but in the practice of most cottonseed oil refiners a subsequent treatment removes the taste and odor imparted by the earth. This action is in some way connected with the "acidity" of the earth and can be entirely overcome by neutralizing this absorptive power with lime although, as before stated, the bleaching power, unfortunately, goes at the same time.

Besides these difficulties which must be met before an American earth can become successful, there is another within the refinery, and this is due to the fact that the workmen are always prejudiced against any new earth and any special change in their measures or methods. They accordingly lay all difficulties which may arise in the refining process to the innovation and condemn the earth to their superiors.

In spite of all these facts it is the opinion of the writer that imports of English earth will show a great falling off before many years are past.

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NOTES.

Note: A Modification of the Tannin-Salt Method for Separating Proteoses and Peptones.—Some criticism has been raised in regard to the Tannin-salt method for separating proteoses and peptones from the simple amino bodies as worked out by Bigelow and Cook[1]. The principal criticism is in the fact that in the Kjeldahl digestion when sulphuric acid is added to the filtrate of the tannin-salt precipitate and heat is applied, serious foaming takes place which often results in loss of sample.

[1] This Journal, 28, 1485.

The process is now carried out as follows: 50 cc. of the tannin-salt filtrate are transferred to a Kjeldahl digestion flask, and a few drops of sul phuric acid are added. The flask is placed in the steam-bath and connected with the vacuum and the solution is evaporated to dryness. In the digestion process about 30 cc. of sulphuric acid are added, but no potassium sulphate. The large amount of sodium chloride used in the process forms sufficient sodium sulphate, which acts similarly to the potassium sulphate.

The rest of the process is carried out in the usual manner.

With the above modifications the Tannin-salt method gives no trouble in the Kjeldahl process.

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Note: The Occurrence of Coumarin in Achlys Triphylla. *Achlys triphylla* is a Pacific Coast representative of the Berberis family, and like the Oregon Grape, *Berberis Aquifolium,* is found abundantly in the fir forests west of the Cascade Mountains, from British Columbia to California. It thrives especially in the shady slopes of the Coast Range, where its ample leaves form a continuous carpet of green over large areas. Howell in his Flora of Northwestern America describes the plant as follows: "Root stalk creeping, clothed with glumaceous scales. Leaves ample, long petioled, a foot or more high from a scaly base. Leaflets broadly cuneate 3-5 inches long, the outer margin irregularly and coarsely sinuate. Very fragrant when drying. Scape solitary, equalling or surpassing the leaf."

The plant is sometimes called "elk weed," but more commonly "wild vanilla," on account of its fragrant odor when drying. Its clusters are frequently hung in the kitchen or linen closet for the sake of this sweet perfume which it imparts.

The young plants begin to come out about the first of April, and when still very young the leaves have a fragrant odor when warmed in the hand. The odor is also noticeable in the woods among mature plants before they are plucked. The stalk and root of the plant have a fiery taste, which is quite persistent when chewed.

It was at first thought that the fragrance of the plant was probably due to a volatile oil, but distilling with steam failed to yield an oil, showing the odoriferous principle to be non-volatile. A small quantity of the fresh leaves was next shaken with ether and the ether allowed to slowly evaporate. After a few hours, minute, needle-like crystals were seen growing out of the greenish residue. These crystals had the odor of Coumarin and were insoluble in cold water, but soluble in warm water, alcohol and chloroform.