next year we may be able to give the intensity of the sounds heard, with an approach to absolute accuracy.

The results thus far obtained, however, are such as a captain of a vessel coming onto our coast in a fog and a gale would be apt to get. It is for him the fog-signals are established, and I have tried to put myself in his place and to hear with his tired and strained ears the sounds which must be distinguished and differentiated from the shrieking of the wind, the creaking of the cordage, the rattle of the machinery and the roar of the surf.

If he has heard aright the sound of the fog-signal and can tell from the length of its blast and the following interval of silence which one of the several fog-signals in that vicinity it is, he is certain of his position.

The experiments thus far made and the observations taken are to make sure that the mariner can hear aright what he does hear, and to provide against his acting upon errors in hearing, which, if acted on, may place his ship in peril.

SASSAFRAS TREES.

BY WALTER J. QUICK, COLUMBIA, MO.

As being of some scientific interest, it is worthy our attention to note the marvelous growth that ten trees of the above well-known variety have acquired here in Missouri—a growth that is so exceptional of this species that it has not been observed elsewhere in the United States.

The *Sassafras officinale*, of the order *Lauraceæ*, the Laurel family, is very seldom known as little more than a shrub or bush and generally as growing poorly or not at all on fertile soil. In truth, it is looked upon as being in its native element in company with and growing on thin land. This is not a fact, but the opinion prevails since old and worn-out fields, depleted of their fertility in greater part, when abandoned, grow up to "brush," not the least profuse of which is the sassafras. It is a native of America and has been found in every State in the Union, growing much more abundant on poverty-stricken soil, but more luxuriant and larger in proportion, we conclude, as the per cent of humus in the soil increases. In the poor, white clay lands of the New England States and some parts of Indiana, Kansas and this State we have observed it growing where it seems to sprout profusely and does not reach a height of over twelve feet, usually six or eight feet, while in the same States on richer land it will not be found in thick profusion, but scattered and attaining almost to the dignity of a tree in size.

Recently it was our pleasure to visit the beautiful farm of Mr. T. B. Hickman, near Columbia, Mo. During our stay we were shown the various interests of the owner, and our attention was summoned to some peculiar trees of the sassafras variety. Their difference from others of this species consists in their vigorous growth and extreme size, being the largest any one present had ever seen or of which we had in any way known. This preternatural development inspired us to investigation. They exhibited on measurement the surprising circumference of 80 to 82 inches—a diameter of over 26 inches. As the bark is thick and rough, similar to walnut, the diameter of the solid wood is not likely this much, but fully two feet. By triangulation we ascertained the height to be about fifty-five feet, and the whole ten will not vary much from these measurements.

While there is very little indication of decay, as a matter of fact, these trees are fully grown for this variety. Their location is very auspicious for the growth they have made, being the low, rich and moist soil of Bonne Famme creek bottom. The writer has never seen larger trees, and is unable to learn of larger specimens on this continent, with the exception of the species of sassafras of California and the western slope of the Rocky Mountains, known as *Oreodaphne Californica*, which attains a still larger size "in the land of big trees." The aroma from the leaves of this variety is more pungent, in fact, so much so as to occasion excessive sneezing, frequently during high winds. It has a greater reputation medicinally than ours, though the importance of the latter is by no means small.

Our *officinale* species has been introduced into England as *Sassafras laurus*. As is usual with anything imported, they appreciate it more as medicine than we do. A tree near the Royal Gardens at Kew has attained a height of about fifty feet, and is said to be over 110 years old. As there are no other figures given, we cannot compare the size with that of the Hickman trees, but the height is not so great.

Almost every country has one or more species of this tree, all said to differ in some characteristic from ours, but all having the same odor and similar aromatic, sweetish taste. But one country has larger trees. Those of New Zealand grow to a height of 100 to 150 feet. This tree appears in every clime, and is described as having "a large head of horizontal branches." The fruit is a small, black drupe, which is not palatable, but is eaten by birds. The sassafras oil of commerce is made from these seeds and the buds. The leaves of our species are very dark green, rather thick, broad, oblong and elliptical.

In Italy it is more like the American species than any other, and is known as *Sassafrasso*. The word comes from the Latin, *saxum*, a stone, and *frango*, I brake, so named because it was believed that the use of the tea made from it would desolve the gall stones of the bladder and prevent their formation.

In the southern states sassafras grows to the size of trees, generally small, but very abundant. The air is said to be more pregnant with its aroma than further north, and it can be detected a great distance at sea. The bark seems to be more fragrant, too, when steeped.

Sassafras tea is very popular in many sections of the countries where the tree grows. The bark of the roots is kept everywhere for sale, for that purpose. In addition to its use as a table beverage it is employed as a tonic and constitutional stimulant. In those localities where the sugar-maple tree is a native and abundant a very delightful drink is made from the "sugar-water," or sap and bark of the sassafras root. It makes the finest tea in the spring when the sap is forming and is then drunk mostly to resuscitate the system, improving the appetite and aiding the digestion. It is also valuable for boils, pimples and eruptions of all sorts, as well as for rheumatism.

The pith of the new growth and sprouts contains a gum or mucilage, used in eye medicines, as being important in reducing inflammation and granulations. This product is also prepared in the form of a drink for diseases of the kidneys, catarrhal troubles and dysentery.

In many localities there is perhaps no more popular farmers' remedy for diseases of horses. It is administered by grinding the root bark to a powder and giving it in the feed, or by preparing a decoction with which the feed is mixed. Frequently the roots are placed in the horse's feed trough, and he is permitted to bark them himself, which he willingly does, apparently with much relish. In the spring it greatly improves his appetite, strengthens him and assists in shedding and sleeking his coat.