

Correspondence.

Improved Packages Wanted for Honey.

To the Editor of the SCIENTIFIC AMERICAN :

I write this to enlist inventors, if possible, in a new field for the exercise of their genius.

I am a honey producer, and I find that there has been but little improvement made in placing our honey upon the market in new and popular packages.

We have our little pound packages of comb honey, which are desirable and can scarcely be improved.

But a greater portion of our California honey is thrown from the comb with the centrifugal honey extractor, and is shipped in liquid form in 60 lb. tin cans to Eastern and foreign markets.

It is safe to say there is no natural food product that has so much nutriment and healthful properties in so compact form as honey. Honey caters to the taste of all classes and conditions. Still, there are multitudes of people who never get a taste of this desirable sweet.

The sirup of the sugar cane can be manufactured in various grades of sirups, sugars, and into confections a very multitude. Liquid honey, on the contrary, has never advanced beyond the tin can, the glass jar, or the jelly tumbler. The reason is found in the fact that there are difficulties connected with the manipulation of honey that are not encountered in the manufacture of the various products from cane juice. If heat up to the degree of boiling water is applied to honey, its flavor is destroyed, and the color of even the whitest honey is rendered dark and unattractive; therefore, a great degree of heat is not to be entertained.

Nearly all pure honey granulates, or candies, as bee keepers express it. This is a molecular change, and a gentle heat restores it to liquid form. In its candied state, it never gets beyond a plastic, salvy condition; and when it candies in a glass jar, it has the appearance of lard, which is detrimental to its sale.

Honey candies in a low temperature. Suppose the temperature that surrounds the honey were carried to that degree known only in experimental purposes, would it have any further molecular effect? Or again, many liquids are solidified under enormous pressure. What would be the effect upon honey? If it could be solidified by these or any other methods, aside from heat, honey could come into competition with the confections made of other substances. There is no record that these experiments have ever been tried upon our product.

If honey cannot be solidified, still there is a chance to give it to the public in a small, popular package that partakes of the nature of a confection. Our ideas for such a package naturally turn toward glass or tin. But glass is too fragile and too expensive; tin too expensive, and having the additional feature of a baking powder can or pill box. If not too expensive, a gelatine capsule of unique form, and large enough to hold a few ounces of honey, to be sold for a nickel or a dime, would come nearest to an ideal honey confection.

Inventors from the above can gather what is needed, and may be able to aid a large and growing industry. There is another quality in honey that also calls for experiment, and that is, the elimination of the coloring pigment in our darker grades of honey. Water-white honey, such as comes from our wild sages, is most attractive for table use, while the darker grades are relegated to manufacturing purposes. If by some process of filtration, all dark honey could be reduced to a lighter shade, the value would be enhanced.

If inventors desire to experiment, honey can be obtained in the leading grocery stores of almost any city. It is advisable, however, to avoid the liquid that is put up in jars and tumblers, and purchase only comb honey and drain it, or procure the honey direct from some local producer.

With the above suggestions, I trust our inventors can devise something that will aid an important industry.
J. H. MARTIN.

Sec. Cal. Bee Keepers' Ass'n, Bloomington, Cal.

The Non-Refillable Bottle Question.

To the Editor of the SCIENTIFIC AMERICAN :

In an editorial of the SCIENTIFIC AMERICAN of November 30, you refer to the desirability of a non-refillable bottle and quote the conclusion of a prominent firm to the effect that, granted such a bottle is invented, it is still possible and probable its object would be defeated by boring a hole in the bottle and thus refilling it and the hole closed and concealed.

To my knowledge there are hundreds of devices invented to accomplish this object, and inventive minds are at this hour still working on this problem.

It is but fair, since the original suggestion of the desirability of such an invention emanated as a result of the loss experienced by distillers and bottlers, and who may be said to have "fathered" the idea, that a discussion of the requirements and objections pertaining to such an invention be conducted through the columns of your admirable paper with a view that a

true idea may be had of the conditions which such a device must fulfill.

There are nearly three hundred patents on devices to accomplish this purpose, and the fact that none have been adopted is very conclusive proof that none are suitable and shows that the conditions to be fulfilled are not clearly understood by the inventor.

On the other hand, there is reason to believe there does not exist a unanimous opinion, either as to the requisite conditions, or even to the commercial value of such an invention among those who would reasonably be expected to adopt it.

It is quite impossible to discuss the construction of the device, as that lies with the inventor himself, but we may state certain conditions, and, in advancing my views, which I do in all humility and with no idea of presumption, I do so hoping that it may tend, by a free criticism of my opinions, to develop certain conditions to which the inventor may look as a guide in his work and which may be unanimously accepted as embodying the requisite features adaptable to the purposes desired. If a recognized standard is once obtained, it will be a most important step.

First, it must be composed of material unaffected by the contents, and this will exclude all such metals as aluminum, brass, etc.

It may be of glass or of mica, as only hydrofluoric acid affects either, and here let me say that that fact might be urged as an objection parallel to the boring idea.

Secondly, the working parts must be protected from the insertion of a wire, etc., to prevent possible tampering with the same.

Thirdly, it must be commercially strong and durable.

Fourthly, it must be cheap.

Now, as to its insertion into the bottle, cements are objectionable, on account of their solubility and inconvenience in handling during bottling. It must be arranged so that it is quite as easy to insert the device as to cork it.

Let us see what tests it must successfully withstand :

First, the egress of the liquid must be free, and the freer the better, but if not free enough, it is a decided objection.

Second, shaking the liquid into the bottle must be impossible.

Third, refilling by submersion in free liquid impossible.

Fourth, refilling with the bottle in any position by severe pressure or exhaust or pressure and exhaust alternately impossible.

Such are the conditions which are to be sought and attained by the inventor as to its practicability.

In view of the extent of the subject, it may be better if I withhold other features of secondary importance in the device affecting its value and adaptation by the trade for some other time.

The point I wish to make, however, is that the question is of vital importance to many struggling inventors, and that a proper discussion of this subject will tend to show from now on that it is of the greatest importance to them and the accomplishment of their task that certain conditions are to be recognized by them, and that these conditions be universally acknowledged and accepted uniformly by the trade.

In this way many an inventor will be spared the embarrassment of probable loss by knowing that his device is fatally deficient in some respect.

If the conclusion of your correspondent is correct, which we hope to show it is not, the sooner it is known the better.

I trust you will kindly conclude to publish this, and, if desired later on, I shall have further to say. I would respectfully request my name should not be published, but, if desired, you may use my initials.

Brooklyn, November 29, 1895.

J. C. G.

[Most of the points of our correspondent are well taken, and we hope that his letter will lead to a successful solution of the problem. We do not regard the safety bottle in the light of a "chimera," but we think too many inventors have failed to actually make an experiment with bottles made for use. A working model in a case of this kind seems to be desirable for purposes of experimentation. We believe our correspondent is mistaken in regard to the number of patents issued, as we understand that there are only about a hundred patents that belong to this particular class.—ED.]

Qualifications of a Nurse.

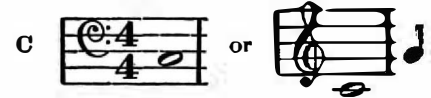
A physician, in speaking of the qualifications of a nurse, to a Pittsburg Dispatch reporter, said, among other things, that she ought to have her five senses, sight, hearing, feeling, smell, taste, in a healthy, active condition. Sight, that she may be able to read directions or read aloud to the patient, and watch the change of countenance. A quick sighted nurse will not need to wait until the sufferer has asked for anything in words. She will, from the motion of an eye, or the lips, or a finger, all in a moment know what is wanted. Hearing, that she may catch the faintest whisper, and not oblige the weak patient to exert the voice, and to

repeat every request. Feeling, that she may detect any change in the heat or dryness of the skin of the patient, and not use any application which will either scald or heat or cause a chill with cold. Smell, that she may detect the least impurity in the atmosphere of the room, or in giving medicine, notice if there be any mistake. Taste, that she may not offer food unfit to be used, or good in itself, but cooked in such a way as to be disgusting to the patient. She should be an experienced cook, so as to prepare such food as the patient requires.

How to Find the Keynote of Auditoriums.

In an article in the American Journal of Science Dr. Ephraim Cutter gives the following directions for ascertaining the key note of auditoriums.

I. Sing the major scale of



=100 m, in a rostrum position facing the audience in an empty auditorium. Use care to sing each note with the same power; that is, with a medium voice uniformly as to loudness. Then observe which note is more resonant than any other note (only, if the observer sings, let him or her not get excited). This note is the keynote. Test by singing this note near a piano with damper raised. If the piano answers back better to this note than any other note (for the chords and overtones will be heard), it is the keynote.

Tune an instrument of the violin family so that one of the open strings will be in the supposed keynote; then sing it and the instrument will respond audibly.

II. If an organ is present play the scale of C natural on the pedal diapason alone, giving each note an equal force. Observe which note is most resonant and this note will be the "keynote," to be tested as above.

III. Or play this C major scale on an open piano and note carefully the effect. When the keynote is struck, there will be a liquid reedy tone imitating an organ tone. This is the keynote.

IV. Another way, practiced by Senator W. M. Stewart and (it is said) by Cicero, is to station a man at the other end of the auditorium, who raises his hand and lowers his hand according as the voice rises and falls, but keeps it stationary when the voice is best audible, and the speaker then voices his utterances in that keynote. The Senator said he did this not knowing the rationale, and Cicero was probably in the same condition.

V. When on the platform, the way the writer tells if he has struck the keynote is to observe the effect on his audience and himself. The most common keynote of auditoriums is F. He usually begins in that key. If it is the keynote, only three or four words suffice as to the audience, which shows by attitude and attention that it hears what is said. Three or four words suffice to the speaker, because he finds that he speaks with ease and feels his voice to impinge on the farthest walls. If he does not find these results, his pitch is raised or lowered till he obtains them.

Defects of Battleship Texas.

Secretary Herbert gave out on December 31 a formal statement concerning the result of the recent official inspection of the second class battleship Texas, the vessel built by the government at the Norfolk Navy Yard. The statement was submitted to the President at the Cabinet meeting by Mr. Herbert before being made public. The prepared statement is as follows :

The inspection board has spent several days on the Texas, carefully investigating the vessel herself, the machinery, guns, etc. They recommend quite a number of changes and improvements, among others that docking keels be fitted one on each side, such as are now provided for in all new battleships; that various bracket plates be stiffened when a convenient opportunity occurs; that additional watertight doors be fitted to facilitate communication between fire rooms and in passing coal from one side of the ship to the other. The feed pumps are not efficient. They also recommend various changes in the piping, so that any pump can supply any boiler.

The packing in the joints of the hydraulic appliances having deteriorated, leaked so that it was impossible to maintain the necessary pressure to operate the 12 inch guns in the turrets. In the hydraulic pump room the leakage of steam from these joints created a heat that made it impossible for the men to remain. The board suggests that the hydraulic appliances as they are be put in proper condition, in order to fairly test their efficiency. Work is also necessary on the turrets, ammunition hoists, electric firing appliances, etc. The location of the 12 inch magazines between the fire rooms is bad for storing powder, being too hot. The board states that this defect can be readily remedied.

The Texas will be sent to a navy yard, and all the deficiencies pointed out will be remedied, and when this is done she will be a first class ship.