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SEA SHELL PERFUME DIFFUSER

Hermann J. Kohl, New York, N.Y., assignor to Norda Essential Oil and Chemical Co., Inc., New York, N.Y., a corporation of New York

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This invention relates to aromatic diffusers having both an improved capacity for retaining pleasing scents and an attractive appearance. More particularly this invention relates to persistent perfume diffusers made by impregnating natural sea shells with appropriate perfume oil compositions.

It has been known heretofore to make sachets or perfumed diffusers of various kinds by impregnating an adsorbent material such as paper, cloth or diatomaceous earth with a scent giving material. However, such diffusers lost their odor rather rapidly and, in the case of granular adsorbents such as diatomaceous earth, required placing in suitable containers such as perforated metal cases.

It is an object of the present invention to make perfume diffusers of increased effectiveness and attractiveness. Another object is to make perfume diffusers from objects available in nature. A still more specific object is to provide perfume diffusers from sea shells impregnated with a perfumed liquid suitably formulated to act as a preservative for the natural shell and simultaneously to control the gradual release of scent over long periods of time.

These and other objects, as well as the nature, operation and use of the present invention will be more clearly apparent from the description which follows.

It has now been discovered that natural sea shells, and particularly those still containing their natural organic outer layer or periostracum, constitute an unusually effective base for adsorbing perfume oils and gradually releasing them over extended periods of time. It has further been discovered that a particularly effective penetration of such sea shells by the perfume oil and its desired gradual release thereafter can be obtained by blending the perfume oil with a polyethylene glycol having a molecular weight in the range of about 200 to 600, or with the mono laurate ester of such a glycol, or preferably with a mixture of such a glycol and such an ester. The impregnating perfume composition should desirably contain about 40 to 75% of essential oil or liquid perfume, about 5 to 30% of one or more polyethylene glycols having a molecular weight between about 200 to 600, and about 5 to 30% of the mono laurate ester of one or more polyethylene glycols having a molecular weight within the range just mentioned. Polyalkylene glycol compounds with molecular weights higher than about 800 tend to be undesirable because of their high viscosity and their adverse effect on the solubility of the perfume oil.

Conch shells represents a particularly desirable type of shell used in the present invention because of their attractive appearance. However, shells of any of the several classes of mollusk, e.g., gastropoda, cephalopoda, scaphopoda, monoplacophora, etc., are similarly useful. As is well known, the shells of live mollusks generally are composed of three principal layers, namely, the outer layer or periostracum which consists essentially of conchyolin, i.e., an organic base allied to chitin, and forms a thick cuticular layer of organic matter on the outside of the shell; an inner or laminated layer, also sometimes referred to as the nacre layer; and an intermediate or prismatic layer composed of prismatic shapes usually oriented at right angles to the inner layer. Both the prismatic layer and the inner layer are composed essentially of calcium carbonate formed within a framework of

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conchyolin, but may contain a slight proportion of calcium phosphate. In dead shells the conchyolin decomposes and disappears with time, leaving the outer surface dull in appearance and leaving the shell considerably embrittled. For purposes of the present invention it is particularly desirable to employ shells which still retain a substantial content, e.g., at least 0.5%, but preferably at least 2 to 5%, of conchyolin. This substance, in addition to making the shell less brittle, exerts a beneficial effect on the perfumed liquid impregnated in the pores of the shell. Conversely, the presence of the perfume oil, particularly when blended with a suitable polyethylene glycol compound, exerts a desirable preservative and mollifying effect on the organic matter of the shell and thus contributes to the retention of the conchyolin and hence to the lasting attractive appearance of the shell as well as its mechanical strength.

Useful as perfume oils in this invention are floral oils such as rose oil, lilac, jasmine, wisteria, apple blossom, etc., or compounded bouquets such as spice, aldehydic, woody, oriental, mossy, etc., i.e., they can be individual or mixed natural essential oils or suitable fragrant synthetic organic chemicals or they can be mixtures of such natural and synthetic materials.

For most effective use in the present invention the perfume oil is desirably mixed with about 30 to 150 parts of proper perfume fixative, especially a suitable polyethylene glycol and/or polypropylene glycol and/or the polyethylene glycol mono laurate per 100 parts of perfume oil so as to produce an oil having a suitably slow and even evaporation rate over extended periods. Since the glycol esters tend to reduce the viscosity of the perfume mixture while the glycols tend to increase it, blending such an ester and such a glycol permits utilizing the fixative properties of these compounds while also striking the optimum balance of fluidity and shell penetration as may be indicated in any particular instance by the nature of the perfume oil, of the shells used and of the impregnation technique employed. The use of glycol laurate monoesters is particularly preferred because other esters such as the stearates or myristates tend to be unduly crystalline and may interfere with the fluidity and solubility relationships of the mixture.

In impregnating the shells with the perfume oil it is desirable to contact or coat the shells with about 5 to 50 parts of the perfume oil composition per 100 parts of shells so that at least 2 to 10 parts will be adsorbed in the pores thereof. In carrying out the impregnation it is particularly desirable to place the shells to be treated in a vacuum chamber and to subject them to a reduced pressure of less than 100 mm. Hg, e.g., 0.5 to 10 mm. Hg, before applying the perfume oil thereto. By then releasing the vacuum, atmospheric pressure can be used to drive the oil rapidly into the evacuated pores of the shells. A particularly effective impregnation of the shells is obtained by repeating such evacuation and vacuum release several times.

The following example illustrates a specific embodiment:

EXAMPLE

16 ounces of sea shells containing a substantially intact conchyolin periostracum were placed in a wide mouth glass resin pot serving as a vacuum chamber and a vacuum of 2 mm. Hg was pulled on the system. The shells typically may range in weight from about 1/10 to 5 ounces per shell though the individual shell weight is not particularly important.

Two ounces of a liquid perfume oil mixture was then introduced into the vacuum chamber and coated on the shells by shaking and turning the pot. The oil mixture used had the following composition: 20 parts of Rose

Oil perfume, 10 parts mono laurate of polyethylene glycol having an average molecular weight of about 600, and 10 parts of polyethylene glycol having an average weight of about 400 ("Carbowax").

The vacuum was released and the system brought to atmospheric pressure, rapidly driving the oil into the pores of the shells. Thereafter the pressure was again reduced to 2 to 10 mg. Hg and the vacuum released as above. After four such treatments the shells were removed and the excess oil was allowed to drain from the surfaces. The thus impregnated shells contained about 2 to 10% of adsorbed perfumed liquid. The impregnated shells were placed in an apothecary jar which was then covered with a loosely fitting cover.

Sixteen ounces of diatomaceous silica were treated with the same perfume oil mixture as above in the identical manner as just described, and the thus impregnated diatomaceous silica was likewise placed in the same kind of loosely covered apothecary jar as the impregnated sea shells.

After six weeks the odor of the impregnated sea shells was distinctly greater than the odor of the Rose Oil adsorbed on the diatomaceous silica. In the case of the impregnated sea shells the odor was found to persist to a useful extent for a period of up to one year.

The shells impregnated in accordance with this invention may be used as a decorative room odorizers, or as sachets for delicately perfuming closets, drawers containing lingerie, etc.

In reading this specification and the appended claims, it should be understood that proportions of materials are expressed throughout on a weight basis unless indicated otherwise.

It should also be understood that the foregoing specification contains a description of the general nature of the invention and of various possible embodiments and

examples thereof but that the invention may be further varied and modified within the spirit thereof without departing from the scope of the appended claims.

What is claimed is:

- 5 1. A perfume diffuser, a seal shell which comprises an outer layer of conchyolin and is impregnated with a perfume oil.
- 10 2. A perfume diffuser according to claim 1 wherein the sea shell is impregnated with 2 to 10 parts per 100 parts of a perfume oil which consists essentially of a mixture of 40 to 75% perfume oil, 5 to 30% polyethylene glycol of a molecular weight between about 200 and 600, and 5 to 30% of the mono laurate ester of polyethylene glycol of a molecular weight between about 200 and 600.
- 15 3. A perfume diffuser comprising a transparent jar containing mounted therein a perfume impregnated sea shell possessing an outer layer of conchyolin, said jar possessing a loosely fitting cover adapted to allow perfume to diffuse from the jar.
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ALBERT T. MEYERS, *Primary Examiner*.

JULIAN S. LEVITT, SAM ROSEN, *Examiners*.

35 VERA C. CLARKE, *Assistant Examiner*.