
Fishery Leaflet 281

Washington 25, D. C.

January 1948

AMBERGRIS IN PERFUME EXTRACTS

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If we will observe and remember we will find that at present certain perfume extracts sold to the trade have no longer, in many cases, the qualities of finesse, originality and distinction they had in the past.

Fifty years ago, to create an extract consisted in reworking the set of natural products one possessed and to mix all these elements in a new way letting some of the elements dominate in order to obtain a new note. Tinctures, vanilla, tonka, civet, castoreum, musk, ambergris were largely used and in this manner a real polish was obtained which caused the other constituents of the extract to adhere to the skin or the material worn.

Later on chemists produced synthetically certain constituents of natural essences which were discreetly introduced in the preparations. Then starting from definite compounds existing in the essences, other preparations have been made having a new note. For example: Ionone has been introduced in perfumes having a note of violet. Ionone has given a great strength and a new tonality which is not far distant from the violet perfume.

At present, laboratories have become factories of synthetic products, research has been done methodically and new products have been created unceasingly. Competition is getting eager and the price of these products has been reduced leaving a very small margin of profit. In order to make a living and pay for the often long and fruitless scientific researches, the manufacturers have retained as much as possible the secret of the new products found in their laboratories. These products have been mixed with others which were chosen in such a manner as to render the identity difficult and are sold as new essences. Some manufacturers have also created synthetic floral perfumes in whole or in part. Some have even gone further and they have created concentrated extracts which can be simply dissolved in alcohol to obtain a liquid ready for sale.

Note: Reproduced from the October 1947 issue of DRUG & COSMETIC INDUSTRY, Volume 61, Number 4, pages 458-460, 555-557.

The perfumer who is anxious to create products within an original and distinguished note has found himself in a new position. In one way, his palette has been enlarged by new elements, the combinations of which have been innumerable. Business becoming more and more difficult, the solution to the problems set before the perfumers can no longer be solved without the manufacture of beautiful products. The creator must exercise his talents so as to present agreeable, distinguished, original and tenacious products. He is, therefore, reduced to use again the notebooks of his predecessors and to inspire himself with the tendencies of the moment. Unavoidably he will return also to the use of tinctures and he will use tinctures of vegetable products as well as tinctures of animal products. Amongst the latter, the outstanding ones are musk, civet, castoreum and ambergris. As far as musk is concerned, everyone knows that the pod is quite vulnerable and that the Chinese have acquired the art of opening the pods and modifying the contents.

Ambergris, however--although because of its value it has often tempted adulterators--as a general rule is a product which least of all is subjected to adulteration. This is because the exterior aspect of ambergris, as well as the formation of it, is very peculiar. It is, therefore, extremely difficult to sophisticate or falsify ambergris without fear of discovery by the practiced eye. Besides, it is very easy to ascertain the purity of the product by burning a small part of ambergris on a hot plate! The odor is very distinctive and no product can replace the perfume which it discharges when burning.

On the other hand, the different lots available on the market are so varied in quality that the difficulty lies in the search for interesting lots. In order to assist the perfumer in this task, we are giving a few indications concerning the origin and the properties of ambergris. This, in order to show what can be expected from tinctures, what price should be paid for a good product and the quantities that should be used to obtain an extract which will have the beneficial properties of this wonderful fixative. Ambergris is a product of animal origin. It comes from a marine monster, the sperm-whale. The sperm-whale generally lives in small groups. He travels great distances in the ocean, searching for food, often consisting of a school of fish which he pursues and devours entirely. His favorite meal consists of certain shell fish, octopuses, squid, etc. which can obtain great dimensions. These are all armed with tentacles and suckers. When the whale and the octopus of great size meet a battle starts. If the bottom of the sea is low, the octopus grabs his prey, covers it completely with its tentacles, sucks its blood by hundreds of suckers and the whale exhausted by great loss of blood and also probably doped by the secretion of the suckers, finally dies. On the contrary if the sea is not deep, as soon as the octopus attaches itself to the whale, the whale drops to the bottom and its weight crushes his gelatinous adversary. The octopus is immediately devoured but after that, it has to be digested. Very little is known about the circumstances in which ambergris forms. It is, however, noted that the musk odor which it discharges also exists in the octopus; it would therefore seem that a certain part of the octopus escapes digestion. Such a large mass of animal substance has to be painfully digested; the liver must work excessively and becomes deformed, consequently stones appear. On the other hand, whales also devour other types of sea-life such as cuttlefish which have a horny beak. This hard portion of the fish resists the acids of the stomach. It is known that in the animals for which regular nourishment is not assured the large intestines chew the food without releasing the product of the digestion in order to permit the absorption of the very last assimilable portion. In the pit of the colon and of the coecum, the mixing takes place and an amalgamation is formed which consists of the crystalline part of the

hepatic calculus and the paste deriving from the non-digestible part of the octopuses and the solid matters which have not been touched. In normal times the stercoraceous matters carry away the entire insoluble mass but in the case of frequent disease, hard kidneys are formed which are inclined to thicken by a process of adhesion. These kidneys can weigh from a few grams to a hundred kilos. These masses are expelled irregularly and float on the sea, they can then rapidly be driven to the coast or sometimes float during a more or less lengthy time before being found by navigators and fishermen who cover the seas with the intention of capturing the whales.

On land those seeking ambergris have found ample supply on the Asiatic coast of the Pacific, the Persian gulf and the Arabian coast. They have sometimes found stones thrown up by the sea a very long time ago, maybe even centuries ago, and time has changed these stones into a white friable matter having a perfume of exquisite finesse which is considered as the most perfect type of white ambergris: this is the (ambre blanc) or fossil ambergris. It literally falls apart in dust but its odor is extremely fine. This kind of ambergris is very much sought after as an aphrodisiac by orientals who highly value it. It is also said to be used in hot coffee. Ambergris is also highly esteemed in the Indies and in the Moslem countries where a current legend claims that ambergris has the power to extend the span of life. Some maharajahs possess a treasure in ambergris and use it for their personal consumption as an aphrodisiac or to make perfume. In Egypt some manufacturers of cigarettes use it in their tobacco. In almost all countries of the world which are bordered by the oceans, it is possible to find ambergris for the whale is a migrating animal which travels enormous distances in its search for food.

The size of a stone found in the intestines of a whale varies from a few kilos to several hundreds of kilos. In 1912 we ourselves had the opportunity to examine a stone in one single piece weighing 160 kilos which was sold by us at that time to a London firm. In 1937, we received a stone weighing 300 kilos. In 1898 one of our correspondents had in his possession a lot of 190 kilos. However, these lots are exceptional. Generally, the stone or stones found in the animal have a more or less spherical shape, others are in the shape of a cone, according to the part of the intestines or the stomach in which the stone forms. The stone, or stones, is generally composed of encircling layers, sometimes very tight and other times with a slight interval between these layers. In this last case, the spaces are generally filled with a black soft paste and in the center of these layers, one nearly always finds a kernel in the heart.

The stones are sometimes numerous and vary in size from that of a chicken egg to that of a large ostrich egg. Other times also, only a single stone is found but this stone is formed by an agglomeration of several kernels which tends to show that this formation represents the soldering of several stones. The exterior of a stone generally varies in color from deep black or golden yellow to a dark or light gray. The inside is generally lighter than the exterior crust.

In former years, ambergris was considered by the maharajahs as precious as gold and pearls. It was kept as a reserve treasure in large caskets. It has been possible to obtain ambergris from this origin which the long period of conservation had refined.

The buyer who wishes to acquire lots of ambergris should know that the qualities are extremely variable. Due to the fact that it is influenced by various factors such as the dimension of the whale, its diet, its more or less

morbid state, the time taken by the calculus for its formation, the time elapsed since its evacuation and the conditions in which it has been formed. With a little experience it is possible to recognize between ten different stones, the one that will have the strongest tincture possessing a fresh and agreeable note.

In principle, you can find in the odor of ambergris four elements which constitute the essential of this product: first of all, a slight odor of the tide recalling the marine mustiness which can be smelled on high seas and which is not the same as the odor at the coasts. Secondly, an indolent note recalling the infectious smell of stercoraceous matters. Thirdly, a finer note which can be compared to the odor of tobacco especially that of certain cigars and to that of the interior of a church: a mixture of incense and moisture. Finally the most important part is a sort of musk mustiness which is evidently derived from the octopuses or mollusks of the same type in which this odor already existed. To view the principal qualities which are generally offered, we find that in black ambergris the musty odor predominates. This is because it is still close to the excrement and has not been refined. The color is darker, the tincture is very colored and the perfume is coarse but strong. Certain varieties of light color and ambergris are more or less odorous. This ambergris is less interesting because the tinctures are weak and not tenacious. In principle, it is best to choose the qualities in which the odor is not too indolent. The marine mustiness must be present without being too acute. A small note recalling the odor of tobacco can be present and, finally, the musk animal note recalling that of the sea-urchin can be favorably accepted. This is approximately what is found in ambergris which has been floating and also in the stones which have been for a long time in the Asiatic caskets.

To make a test of a lot of ambergris, it is sufficient to take a small quantity of the various stones to break up very finely these pieces and to dissolve one gram in 14 cc. of alcohol at 96°. After two or three days, the tincture can be examined. A blotter is dipped in the tincture and should be allowed to dry. The odor should not be feculent after 12 hours. The perfume of the ambergris should be in full development and it should persist for several days. To prepare the tincture, the ambergris should be crushed, then it is pulverized with a mortar. If the ambergris cannot be pulverized because it is sticky, it is necessary to use a hard object to divide it. In principle, the tincture is made in the proportion of 25 grams of ambergris to one liter of alcohol. For example: to treat 1,000 grams of pulverized ambergris, the powder is placed in a container with a large opening of a capacity of 10 to 12 liters. To this powder, 8 liters of alcohol at 96° is added. This mixture is left for 8 days and should be stirred from time to time. The liquid is then poured into another container and a fresh lot of 8 liters of alcohol is poured over the ambergris. After 8 days, the alcohol is again poured off and so on for five successive washings of 8 liters each. The 40 liters are then combined in one container, filtered, and left to age in a warm place for at least six months. This is of major importance.

The settlement which is left is treated with 10 liters of alcohol and is left in this state until the day a new tincture is prepared. The alcohol left in the container will represent the first washing in the new operation. After the settlement has been exhausted it is left to dry for a while, it is ground and placed in metal boxes and can be used in sachet powders or in powder containing musk. To obtain a good result in the preparation of an extract, it is necessary to use 30 to 80 cc. of tincture to each liter of extract. How to use the tincture

Ambergris is a delicate part of the subject, one that is the most difficult to express in a concrete way with mere words. In order to understand the part which ambergris will play in a perfume, we should choose a good extract which has had a deserving success and we should study it with complete attention. To do this, a few drops should be poured on a blotter. Allow the alcohol to evaporate and inhale the perfume. At that time, we experience complex sensations which do not seem to act in the same way on the olfactory organs. First of all, we perceived a note which is formed by all the volatile constituents; aldehydes and ethers, which gives the departing freshness. After that, the extract unfolds. It is the medium which has to be agreeable, delicate, pleasant, distinguished, sweet and powerful. Finally behind this medium, you can find the base note which can be compared to the background of a picture or to the lower chords of a musical harmony. Isolated, this note would be deprived of charm, but as an accompaniment it puts in value all the other portions of the composition. In fact, if we follow in the same manner the evaporation of a solution of jasmin, absolutely pure, at 1/2 or 1 per cent, we will find again the three parts mentioned above. In other words, in the beginning a fresh portion will be released that which is due to fatty aldehydes, the full series of ethers of benzyl alcohol and its equivalents, of linalol ethers and its derivatives, after that a medium which is formed by the linalol and eugenol and their equivalents, the aromatic aldehydes, jasmone and the full series of more or less well-known elements give the whole unequalled delicacy. Finally, a powerful base which is composed by the phenols and the indolent products. This consists of an amalgamation of bodies that the flower secretes or eliminates in the form of gaseous products which have the mission of either attracting pollen-carrying insects or insuring the evacuation of non-assimilated products. In this complex, harmony of products so different in their origin and their function, nature has succeeded in creating one of the sweetest, most complete and noblest perfumes known. This harmony forms a construction of inimitable delicacy and of wonderful blending. The perfumer who intends to make a new composition will have to be inspired by these principles and apply them with the modesty that becomes all those who have studied the work of nature and who have meditated upon its perfection.

In the particular case which we are discussing, we will show how this construction will be built and the important part the ambergris will play. Let us take first of all two or three chosen specialties which are outstanding amongst the perfumes in vogue and which are not incompatible. Let us seek through a judicious dosage to obtain a new note agreeable and controlled. Let us add synthetic flower perfume well-chosen and well-dosed: cassis, lily of the valley and lilac, then the mass of products which constitutes the base, hydroxy-citronellal, ionone, linalol, eugenol, styrax, etc. Let us add the proper quantity of natural flower essences absolute: jasmine, orange, rose, cassis, according to the note of the composition. All these elements giving a floral harmony forming with the initial note a perfume recalling a natural production. To obtain a sweet odor in the flask of an agreeable touch at the beginning of the evaporation, we will use bergamot natural or terpeneless, lemon, orange terpeneless, benzyl acetate, synthetic jasmine, fatty aldehydes which will have to be used with a lot of discretion. After that, we will create the binding with the bases by a sort of counter-song which will reinforce the floral note. We will take the three old standards: santal, vertivert, patchouly which we will ally with the products which we judge necessary for the good tone of the preparation. The base will contain tincture of musk, civet and castoreum if necessary. Ambrette and ketone musk and fixed products such as heliotropine, vanillin and coumarin are also used

to conform with the note chosen. At that moment if we study the liquid carefully on several blotters at different stages of evaporation, we will note that in spite of our efforts, the different elements tend to evaporate successively. If the note of the perfume is not stabilized, we will detect the elements which seem to dominate. We will reduce the dosage. When everything is stabilized we will start to add tincture of ambergris at the rate of 3 per cent which we will then increase to 8 or 10 per cent. We will note without effort that all the elements used will now take a definite place.

The base which we have so much admired in the solution of jasmine will be recognized thanks to the presence of ambergris. To resume, let us say that the perfumers are not sufficiently interested in ambergris because they have been offered a variety of mediocre quality or because the tincture has been used in reduced quantities. Let them choose with care, the quality of ambergris, let them prepare correct tinctures and utilize them in sufficient quantities and they will then note that the extracts which they create will have a base, a finish, a distinction that no other product could give them.

Partial List of Perfume Manufacturers

van Ameringen-Haebler, Inc.,
315 - 4th Avenue,
New York 10, New York.

Kolmar Laboratories,
Port Jervis, New York.

Magnus, Mabee and Reynard, Inc.,
16 Desbrosses Street,
New York 13, New York.

Schimmel & Company, Inc.,
601 W. 26th Street,
New York 1, New York.

Gerard J. Danco, Inc.,
3 East 44th Street,
New York 17, New York.

Felton Chemical Company, Inc.,
599 Johnson Avenue,
Brooklyn 6, New York.

Norda Essential Oil & Chemical Co.,
601 W. 26th Street,
New York 1, New York.

Roure-Dupont, Inc.,
366 Madison Avenue,
New York 17, New York.

Givaudan-Delawanna, Inc.,
330 W. 42nd Street,
New York 18, New York.

Lautier Fils, Inc.,
154 W. 18th Street,
New York 11, New York.

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