

Crystal cod liver oleine : an essay / by J. & A. Bedford.

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CRYSTAL COD LIVER

OLEINE :

AN ESSAY.

BY

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PREFACE.

THE following short Essay has been published, as the best and readiest means at our command for making known a new importation of Cod Liver Oil. We have written with some knowledge of the subject in hand, and we hope with fairness and candour.

COD LIVER OIL.

CHAPTER I.

FEW remedies have been received with so much favor as Cod Liver Oil.

The value of the Oil has been proved by experience, and by men so competent to form a solid judgment, that doubt respecting its value is no longer entertained. The Oil is at this time more extensively administered than any other medicine, with the exceptions, perhaps, of the preparations of Cinchona Bark, Opium, and Iron. Originally brought into use in the latter part of the last century, as a remedy for Rheumatism of the prolonged or chronic type, it was soon afterwards tried with eminent success in the treatment of Gout, in cases where that disease had passed the acute stage, and, becoming intractable, had re-

duced those who were suffering from it to a life of continued feebleness and pain. About forty years ago it became a remedy for the disease known as Phthisis Pulmonalis, or Consumption of the Lungs, and it was prescribed for this malady with doubtful success until the year 1841, when the acute and distinguished Professor of Clinical Medicine in the University of Edinburgh, Dr. Hughes Bennett, placed its claims as a remedy for Pulmonary Consumption beyond dispute.

Since that date, the Oil has been employed not merely in Gout, Rheumatism, and Consumption, but nearly in all diseases of a prolonged and enfeebling character. In the affections known as Rickets, Anæmia, Bright's Disease of the Kidneys, Cancer and Chlorosis; in cases of Scrofulous Abscess, in Scrofulous Tumour, in Diabetes, in Chronic Pleurisy, in Syphilis during

the second and third stages, and in various affections and eruptions of the skin the remedy has found acceptance, and has been trusted, if not as a specific, at least as an adjuvant, without which the practising physician would be constantly, nay, daily perplexed. As one of our best known modern physicians has expressed to us, “ Were Cod Liver Oil removed from my “ medical treasury, I should feel I had “ lost my left hand in nearly half the “ chronic diseases that come before me “ for treatment. I hardly recall a day for “ many years past in which I have not “ prescribed the Oil.”

CHAPTER II.

DISCOVERY OF COD LIVER OIL AS A REMEDY.

NOTHING more thoroughly demonstrates the value of Cod Liver Oil as a medicine,

than the intense eagerness of the discussion upon the simple question : Who introduced the Oil into practice ?

Divested of learned argument we may briefly state, that Animal Oils have been successfully employed for many centuries past in the treatment of the same class of diseases for which Cod Liver Oil is now employed. We do not mean to state, that the success arising from the use of other Animal Oils was equal to that which has attended the Cod Liver Oil, but there can be no doubt, that a certain analogy both in action and in amount of success, admits of being traced out. The ancient treatment of various disorders, acute as well as chronic, by the process of inunction, or in other words, by the rubbing of oily and fatty substances into the body, is a strong evidence of the fact we have here put forward.

Celsus, the classical medical writer, who lived in the time of the Emperor Tiberius, and whose Latin Book on Medicine is used for examination, we believe, by nearly every Medical College in the world, is most precise in describing the external uses of Oils, and recommends their application in a large number of human diseases. "Then let the patient be anointed with Oil," is a frequent expression used by him; and, indeed, the practice of rubbing in Oil, is in many instances still carried out by medical men of the present day. Celsus also recommends the internal administration of Oil; but the first man in comparatively modern times who prescribed Oil in large quantities, was the famous Dr. Woodward, who lived about the time of Queen Anne, and who obtained such notoriety for this application, that after his death, a very unfair satirical epitaph was

written on him, stating the number of gallons or rather hogsheads of Oil with which he had dosed his patients. Since his day, little seems to have been done in the same direction, until the latter part of last century, when Dr. Percival, one of the most accomplished physicians of his age, began to use Animal Oils for the treatment of Rheumatism and Gout, and actually used Cod Liver Oil as his principal agent of this kind. Dr. Percival makes no claim to originality in this introduction, and it is fair to presume from his writings, that he had obtained information respecting the value of Cod Liver Oil from some one else.

We cannot however state with precision who was the discoverer of the remedy, nor the exact date of its first application; at the same time the evidence all tends to the conclusion, that such credit as is due

to the introduction, belongs to English medical men.

From the time of Dr. Percival, the Oil did not hold a very prominent position for fifty years ; it was used in England, Germany, France, and America, with varying success. At last its real value was scientifically tested and expounded in 1841, by the physician to whom we have before made reference, Dr. Hughes Bennett, of Edinburgh. It is doubtful whether the value of the Oil would, up to this time, have been fully appreciated, if Dr. Bennett's admirable essay had not appeared, and it may be safely claimed for him, that the enormous boon of the most effectual remedy for one of the most fatal diseases of England, statisticians say,—*the most fatal*,—Consumption of the Lungs, was presented to the world by him. Of the further progress of the remedy we need not

speaking. It is a progress that has grown day by day and year by year, always improvingly.

CHAPTER III.

ON COD LIVER OIL IN COMPARISON WITH OTHER OILS AS A MEDICINE.

THE question has often been considered by practical men, whether some other and cheaper Oil could not be brought into the market to compete successfully with Cod Liver Oil. It has been assumed, and the assumption is quite fair, that, in these days when chemistry is performing such wonders, that the transmutation of silver into gold is thought to be "on the cards," the chemist might by skilful manipulation transmute any pure white Oil, into an Oil similar in quality and medicinal action to the specific Oil of which we are

speaking. This result appears at first sight the more promising, owing to the close analogy of composition of several Oils, with Cod Liver Oil. The elementary parts of all these Oils are the same, *i. e.*, they are all composed of Carbon, Hydrogen, and Oxygen, and the proportions of the elements in each specimen are hardly so different as to account on easy grounds for difference of action. In proof of this statement, we would direct the attention of the reader to a short Table (p. 14) in which the elementary composition of seven Oils is given by the side of the composition of the Crystal Oleine.

A glance at the Table thus supplied would lead to the conclusion, as we have already said, that the composition of the Oils named, is so close as to admit of the substitution of one for the other. The realisation of such a fact would be a great

COMPOSITION OF OILS.

	Carbon. —	Hydrogen. —	Oxygen. —
Nut Oil ...	79.77	10.57	9.12
Sperm ...	78.91	10.97	10.12
Almond ...	77.40	11.48	13.82
Olive... ..	77.21	13.36	9.43
Whale ...	76.13	12.40	11.50
Linseed ...	76.01	11.35	12.62
Cod Liver Oil ...	77.40	11.30	11.30
<i>Crystal Oleine</i> ...	77.90	11.40	10.70

gain to the sick, and would be hailed by the conscientious manufacturer with as much enthusiasm as by any class of the community. Unfortunately, however, the practical experience of the medical world is to the effect, that notwithstanding the analogy of composition between Cod Liver Oils and other Oils, the Cod Liver Oil exerts on the human body a greatly superior curative influence. For this reason the Cod Liver Oil retains its place in the market to the exclusion of all other Oils derived from the animal kingdom. Experiments of a most extensive kind have been carried out to test this point, with results that do not admit of denial.

Vegetable Oils have also been used in competition with Cod Liver Oil, and in the year 1854, mercantile men were of opinion that a demand would be made for pure Cocoa Nut Oil prepared from the

thoroughly ripe and sun-dried kernel of the Cocoa Nut of the Cochin coast, Ceylon, and Cocos Isles, and doubly refined after very forcible expression. This Oil gained its temporary celebrity owing to the circumstance, that one of the eminent physicians to the Brompton Hospital for Consumption, Dr. Theophilus Thompson, tried it largely and came to the conclusion, that for rendering the blood richer in its red part—its red corpuscles—the results obtained from the Cocoa Nut Oil were almost as decided as from the Oil from the Liver of the Cod. Hence he also inferred that the Cocoa Nut Oil would be a very useful substitute for the Cod Liver Oil.

Cocoa Nut Oil twice refined, would be one-sixth cheaper than Cod Liver Oil, but as we have not heard of any demand for it in the drug market for many years, we suppose that medical men have not

found it so efficient, or so applicable as was originally expected.

Attempts have been made to show, that the specific virtues of Cod Liver Oil rest exclusively on substances, extraneous to the absolutely pure Oil, which substances are present in all specimens. Good specimens of Cod Liver Oil contain with other matters, small quantities of

Biliary Matter,

Iodine,

Chlorine,

Phosphorous,

Iron,

Potassium,

Sulphur,

And it has been assumed, that one or all of these, or other accidental substances, are the specific remedies in the Oil, the Oil itself being inert. The evidence in favour of this notion is altogether

inconclusive: first, because no two specimens of Oils from different Livers yield the same extraneous products, although both specimens may be equally good in a medical sense: secondly, because the extraneous matters, when extracted, do not represent the virtues of the Oil: and thirdly, because it is proved that all oily substances, though less effective than Cod Liver Oil, are, to an extent useful, thereby showing that the oily quality is the essential quality. We may conclude this chapter then by saying, that, whilst there is no doubt as to the great value in medicine of Cod Liver Oil over all other Oils, the cause of the specific value is not as yet explained.

For our part, we are contented if we understand what qualities of the Oil are most esteemed by the Faculty of Physic, and are assured that the Oil does good.

CHAPTER IV.

THE STERLING QUALITIES OF A GOOD COD LIVER OIL.

THE first and essential quality of a specimen of Cod Liver Oil is that it shall be of a character acceptable to the taste of the sick. We hear on all sides, and from all sections of medical men, that the great difficulty in the administration of Cod Liver Oil lies in inducing patients, whose appetites are nearly always more or less capricious, to venture upon taking it. The Oil (in cases for which it is adapted) "does good when it agrees," is a saying equally common to the lips of patients and of their attendants. Hence it becomes of the greatest moment for the merchant to secure for the public such an

Oil that in the large majority of cases it shall agree, which means in other words, to secure a perfect Oil.

It has however been objected, that in the attempt to render an Oil palatable, virtue is taken out of it, and some of the more offensive Oils are after all preferred to the best Oils if the patient can be induced to persist in taking them. We do not venture to state that this is not in some instances a correct view, because it may be, that a good Oil from some error in preparation is unnecessarily rendered unpalatable; while, on the other hand, it is possible that a common Oil may be rendered very palatable. Both these conditions are tenable, and we do not dispute them for a moment; at the same time we maintain that a good Oil may be rendered quite palatable, that the best Oil, as an Oil, may be the most agreeable to the

patient, and that first quality and first palatability may be easily combined.

The qualities that render Cod Liver Oil objectionable are—

1. Dark Colour.
2. Fishy Odour.
3. Rancidity and Pungency of Taste.

The *dark colour* of Cod Liver Oil, when it is present, is due to one of two causes; it is either natural or artificial. In some cases the Oil is not properly refined, and the result is, that various organic substances or impurities which have no relation whatever to the goodness of the Oil, are mixed with it; in other cases the Oil is obtained by the action of heat upon the residue of Cod Livers; and in a third class, a very moderate Oil is coloured intentionally for trade purposes, by mixing with it given quantities of charred Oil, so as to obtain a desired tint; according

to the colour produced the Oil is named, and in some instances a specific quality or virtue is assumed for each variously colored specimen. Of course this colouring is all useless, it neither renders the Oil better nor worse, and as the Oil is often one variety travelling under different appearances, it is rather deceptive than otherwise to those who do not understand the nature of the process to which it has been subjected.

We maintain that the best Oil may be quite destitute of color, and that it ought never to be of a deeper shade than light amber or straw color. When an Oil is of deeper color than this, it has either been imperfectly refined or intentionally darkened for the purpose of concealing an indifferent specimen of pale Oil, or for inducing the belief, that because of its color, there must be in it a special value.

The *fishy smell* of Cod Liver Oil, peculiar to raw specimens of the article, is due to the escape from it of organic volatile compounds that have been formed during a process of decomposition of the tissues of the fish generally and of the liver, after death. These volatile products are all removeable in the process of preparing the Oil, there is not the least reason against their absolute and entire prevention, and no Oil offered as a medicine ought to contain them. We name this fact because there are persons, who knowing nothing of the manufacture or the composition of the Oil, are of opinion that the Oil is not genuine unless it conveys the peculiar fishy odour. The error cannot be too forcibly explained away.

The *rancidity* of some Oils derived from the Liver of the Cod, is extremely prejudicial to their action as medicines.

The rancid character of such, is due to the presence of fatty acids, which have resulted from oxidation of the Oils after they have been prepared. These acids should never be present in any specimens of Cod Liver Oil, not even during the extreme heat of summer. They render the Oil irritating to the stomach, give rise to eructations from the stomach, destroy the appetite, produce nausea, and in some cases, we are informed, set up diarrhœa, or excite it when there is already a tendency to its occurrence. Rancidity is preventible by skilful preparation, and whenever it is present the evidence is certain that proper care has not been taken in the preparation.

The external qualities of good Cod Liver Oil are then, lightness of color, freedom from fishy odour, and freedom from rancidity; but there are other qualities

which although less obvious and less important, do, notwithstanding, deserve consideration. In fatty substances there are three distinct principles, called Oleine, Margarine, and Stearine; and in fluid Animal Oils, there are two of these principles, Oleine and Margarine. These differ in regard to their fluidity at different temperatures; the Oleine remains fluid far below freezing point, while the Margarine and Stearine solidify at low temperatures. In Cod Liver Oil, unless it be specially prepared, Margarine and Oleine are present.

It has, however, been found that practically, the best Cod Liver Oil is that which has been thoroughly freed of Margarine and which consists purely, or nearly so, of Oleine. Hence it has been considered a desideratum to furnish in large quantities a pure Cod Liver Oleine. On a small scale, such an article has been made

and tried, both in England and on the Continent, with great success. The Oleine pure, is more easily digested by the sick person, and creates as a consequence, less nausea and disturbance of the stomach and bowels. As an Oil, moreover, it keeps better, and does not change in appearance with variations of heat and cold.

We set aside as unworthy of belief all the extreme and unsustained statements as to the value of the minute quantities of Iodine, Biliary matter, and other extraneous substances found in Cod Liver Oil. In a dose of one teaspoonful of the Oil, all these substances taken together, would not make the $\frac{1}{10,000}$ th part of a grain, and it were an insult to common sense, to suppose that the value of an Oil could be determined by infinitesimal variation in such a proportion of any substance.

To sum up, Cod Liver Oil of the

finest quality, should be white, inodorous, tasteless, and composed of Oleine pure: to such an Oil we invite attention in our next chapter.

CHAPTER V.

CRYSTAL COD LIVER OLEINE.

WE described in our last chapter the character of a good Cod Liver Oil, and we have now to state that we have produced an Oil which bears the tests we have mentioned as indicative of a perfect Oil. This Oil, which, for the sake of distinguishing it by its properties of color and transparency as well as by its composition, we name *Crystal Cod Liver Oleine*, —is the purest and we believe the best Oil ever offered to the medical profession and the public. We at once disclaim for

it any specific curative virtue over other first rate specimens of Cod Liver Oil, but we urge that while it possesses all the therapeutic value of any other similar Oil, it has properties of its own which render it peculiarly advantageous.

Refined by a new and most effective, but at the same time a simple process, the Crystal Oleine differs from all other Oils in the market in several particulars.

I.—In the first place the Oil is a pure Oleine: It is more purely an Oleine, than specimens specially prepared in this country. Thus we offer for the first time, *on an extensive scale*, a pure Oleine derived from the Liver of the Cod.

II.—The Oil being expressed and refined from the fresh Liver of the Fish, there is in it no trace of decomposing organic matter, nor of

volatile product of decomposition ; hence it is free from fishy or other disagreeable odour. The sense of smell of the most delicate person would not be affected by it in the least degree.

III.—The Oil is entirely free from rancidity, and consequently from those fatty acids to which we have directed attention as common to inferior specimens of Cod Liver Oil. It is less liable, therefore, to produce symptoms of indigestion, viz., heartburn, nausea, eructation, irritability of the bowels, or diarrhœa.

IV.—The Oil is almost tasteless, and with many, if not all, it is considered quite tasteless ; it drinks as blandly as new milk, and leaves no unpleasant flavor behind.

The Oil contains in addition to Oleine, biliary matter, iodine, sulphates of soda and of lime, and minute quantities of phosphoric acid, phosphorus, iron, and potassa. We have expressed our belief that these extraneous substances are not of themselves of value, and we have given our reasons for this opinion. At the same time, as there are many who may differ in this particular point, and who might hold an unfavorable view respecting the Crystal Oleine, if they supposed these principles were absent, we think it just to the Oleine to say that the substances named are one and all present. The physician, therefore, who prescribes the Crystal Cod Liver Oleine, and who holds that minute doses of iodine and of biliary matter especially, are necessary constituents of the Oil, is prescribing them in combination with a pure Oleine, and in a form least objectionable to the taste.

In producing the Crystal Cod Liver Oleine for the English market, the greatest difficulty has been the question of price. It will be obvious to all that a Crude Oil from which the margarine has not been removed, must, under ordinary circumstances, be a cheaper article than an Oil consisting of pure Oleine. The difficulty is not and never can be completely overcome, but it is now so far met that the prices charged can be assimilated to the following scale—

PRICES OF CRYSTAL COD LIVER OLEINE:

Per $\frac{1}{2}$ -pint Capsuled Bottle . 2/6

Per pint ,, . 4/6

In conclusion we have only to add, that the Oleine having been subjected to Physicians of practical experience and judgment, it has been proved to be not only

of first quality in a medicinal sense, but as an Oil more agreeable to patients than any that has before been imported. With this introduction, we beg leave to submit the *Crystal Cod Liver Oleine* to the medical world and the public, asking for it nothing more than a fair field and no favor.

The Crystal Cod Liver Oleine may be taken in doses of from one to four teaspoonfuls. It goes well with milk or any other bland fluid, but it is in itself so unobjectionable that the majority of patients will find it sufficiently agreeable in its simple form.

L O N D O N :

S. STRAKER & SONS, PRINTERS, BISHOPSGATE STREET.