

child. If, with a friendship formed in this manner, a little seriousness and energy are allowed to be blended, much more authority will thereby be acquired in a moment over the child than the parents ever thought possible. Children, under such authority, allow themselves very quietly to be examined, readily lie down upon any side desired, take even the bitterest medicines without objection, and assist the medical examination in every manner possible. *Never, and under no circumstances, should the attempt be made to bring an unruly child into obedience by harshness, by firmly holding it, and still less even by a slight blow.* Such measures not only cause greater fear, and give rise to violent crying, but the physician will thereby only bring upon himself the aversion and even hatred of most narrow-minded parents—the class that usually have boorish and unmanageable children. On the other hand, if the physician in such instances retains his equanimity and mild voice, the parents will feel most disgraced by the ill-breeding of their children. They then sometimes punish the child so severely that the physician, from a medical point of view, has to interfere, and then he will have gained an humble and submissive patient. In general, the principle will hold good that the more seriously sick the child is, all the more easily will it permit itself to be examined.

To the commencing practitioner, inexperienced in the Pædiatria, these observations may appear insignificant and unimportant, but, when he has once conducted himself in accordance with them, he will perceive that without these details a successful treatment would be clearly impossible, notwithstanding all his knowledge and skill in the methods of examination.

CHAPTER III.

NURSING AND CARE OF CHILDREN.

THE best nutriment for a new-born child is undoubtedly the milk of its own mother; if she cannot nurse, the milk of a wet-nurse; and, if this is also unattainable, the milk of a domestic animal.

In regard to the suckling of a child by its own mother, two adverse conditions are not infrequently met with, viz.: an *inability* of the mother to nurse; and the existence of circumstances rendering it improper for her to do so.

She *cannot* suckle, when she has insufficient or no milk, when the

nipples are wanting or are malformed, or when local diseases of the breast, abscesses or carcinomatous nodules, exist. Whether a mother will have milk and be able to suckle her child, is, in primiparæ, difficult to prognosticate. The size and firmness of a breast form no positive guide for that. Often young, healthy women, with well-formed and apparently physiological breasts, have no milk, while in feeble women, with previously flat bosoms, it is often secreted plentifully, contrary to expectation. Pregnant women, from whose breasts much colostrum flows, will be best able to suckle the coming child. In regard to this secretion, *Donné* divides pregnant women into three classes: to the first belong those who have so little colostrum that at the end of pregnancy it is only possible to squeeze out a few drops from the glands. This colostrum microscopically contains only a few milk-globules, and only a small number of colostrum-corpuscles. A small quantity of milk-secretion should, then, only be calculated upon after the confinement.

The second class comprises those women who, it is true, secrete much colostrum, which, however, has the very same properties as that of the first class. It is just as poor in milk-globules and colostrum-corpuscles, and a plentifully-secreted, though thin, but non-nutritious milk may, with probability, be expected after delivery.

But if, in the third class, the secretion of the colostrum at the end of gestation is rich, milk-white, and mixed with yellow streaks and lumps, and many milk-globules, and colostrum-corpuscles are present, then we may prognosticate, with tolerable certainty, that the pregnant one is destined to suckle her child, and will secrete sufficient nutritious milk.

Total absence of the nipples is seldom met with; frequently, however, a depressed nipple is observed, for which usually a too high corset, in which the space for the chest is too small, is to blame. After delivery it is too late to improve these depressed nipples, and the child will uselessly tire itself out in the attempt at extracting the milk, and finally ceases altogether; much, however, may be done for this condition during the last months of pregnancy. The women should be made to wear very loose garments, and once every day should put the bowl of a clay pipe over the nipple, and suck with the mouth at its stem, or, still better, the caoutchouc breast-pump may be employed. *Bouchut* suggests, if the woman cannot tolerate this manipulation, for another person to use the lips in the same manner as the nurse often draws the breast of the parturient woman.

Lastly, those benign, hard nodules, which occur so frequently in girls and young married women, but which are perfectly painless,

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should not be confounded with carcinoma of the breast. They are totally harmless, and disappear completely in the first few weeks after parturition, soon after the nursing is in operation.

The second condition, i. e., circumstances rendering it improper for the mother to nurse her child, is much more difficult to explain. Feebly and tenderly-organized women, at times, bear the suckling very well, when they otherwise possess favorable external circumstances and the lacteal secretory function so necessary for suckling. In other cases, on the contrary, nursing acts upon strong, robust women, when poverty, anger, grief, or unhappy matrimonial circumstances, become added thereto, extremely unfavorably; they become emaciated and grow old remarkably early. Those mothers must absolutely be forbidden to suckle their children, who suffer from arthritis, epilepsy, syphilis, chronic cutaneous diseases, and tuberculosis, or even if they have only an hereditary disposition to them. In hysterical women, wet-nursing has, by virtue of the extraction of the vital fluids, not only an injurious influence upon the health of the mother, on account of the influence of the nervous system on the secretion of the milk, but also upon the child. When the mother is at an advanced age, especially if she is a primipara, wet-nursing is of itself forbidden, by the want of milk; at any rate, it is in all cases to be dissuaded from on account of the thinness or poverty of the milk. Acute diseases, exanthema, typhus, puerperal fever, etc., usually cause stoppage of the milk; as long, however, as it is secreted, the child should not be weaned. Such milk does not act injuriously upon the child, and its abstraction is, in all instances, very advantageous to the mother.

When none of these evil conditions exist, it should be made every mother's sacred duty to suckle her own child. Frail constitution and smallness of stature cannot remove this obligation; otherwise most of our city women would be exempt from it. Aside from all other circumstances, the milk of its own mother always agrees best with the child, for it is an often-observed fact that the child of a feeble mother will prosper at the maternal breast and grow excellently, while a strange child, whose guardians had been misled by the good appearance of the first, which had been given this feeble mother for a wet-nurse, would thrive under no circumstances.

If a mother cannot or will not suckle her own child, then a wet-nurse is always the best substitute.

It is very difficult to prescribe general rules for the selection of a wet-nurse, because a number of local circumstances come into consideration here, which must, naturally, differ in different cities and countries.

If the selection can be made from a number of women, who offer

themselves for the situation of a wet-nurse, that one should always receive the preference which has given birth to, and at her own breast brought up, a robust, healthy child. If this can be confirmed by personal or creditable evidence, we have the greatest guarantee that after the expected deliveries the nursing will proceed with equal regularity. It is always well to procure a wet-nurse who has been confined three or four weeks before the woman whose child she is to suckle, for in the first three weeks almost every parturient woman has a tolerable quantity of milk to display; but, in many, the milk, after this period, decreases from day to day, and thus, in case it is necessary to engage a wet-nurse who has only been confined a few days before, we may be compelled, in a few weeks, to discharge this expensive individual, on account of insufficient milk. Moreover, the sequelæ of parturition, and particularly those annoying and tedious abrasions of the nipples are no more to be apprehended in a woman who has already nursed several weeks. The advantages enumerated here, at any rate, outweigh the slight disadvantage that the milk of such a wet-nurse, by rights, belongs to a child that is several weeks old. On the whole, the chemical composition of the milk in one and the same wet-nurse, and still more in different ones, is so changeable that it is merely a fortunate coincidence when the milk of a strange woman agrees as well with a child as that of its own mother.

The best age for a wet-nurse is between twenty and thirty years; still, many exceptions may be made to this rule; girls under twenty years are mostly primiparæ, and therefore as yet do not possess the necessary qualifications for wet-nurses. In persons who are more than thirty years of age, the metamorphosis of materials no longer takes place with sufficient activity, such as is requisite to produce milk that is satisfactory in quality and quantity. The French physicians maintain that brunettes have a more nutritious milk than the blondes, of which, in Germany, I have not yet been able to convince myself. As regards the mammary glands, it is necessary that they should be of moderate size, should be covered with healthy integument; the nipples should be two or three lines prominent, and on pressure of the mammæ the milk should flow from the lacteal ducts in numerous fine streams. Formerly it was also insisted upon that the wet-nurse should have good teeth; but this, on account of caries of the teeth having become so general, now seems to be entirely neglected. It seems to me much more important, however, that she should have healthy, firm, red gums. Pale, bluish, easily-bleeding or foul-smelling gums always give rise to a suspicion of poverty of the blood, or difficult digestion, two conditions which in no way harmonize with wet-nursing. Among our people, the phlegmatic and submissive wet-

nurses are the most desirable; an imperious person can never serve as a wet-nurse in a house where several servants are employed; for she is barely engaged before she makes them feel her unbearableness, and after several days seeks to drive them from the house. The *finale* of the whole scene is, that the peace-disturber is discharged, and the family physician, who is expected to have an expedient for every thing, has to procure another wet-nurse. Generally, country girls are preferred to those from the city. If it were true that the morality in the country is greater than in the city, then this would no doubt be an important reason; my experience, however, does not confirm these suppositions. In most country wet-nurses the additional evils often exist that they become seriously home-sick, cannot tolerate the city board and manner of living, and with difficulty become acclimatized, so that, notwithstanding their stronger formation and their more developed breasts, they render less service than a factory-girl or a city servant-maid.

Before a wet-nurse is engaged she and her child must submit themselves to an examination of their entire bodies; the child must be well nourished, should be sufficiently fat for its age, and on no parts of its body should have the least suspicious-looking sore. The nurse should have the above-described qualifications of the breasts and gums; the physical examination of the thoracic cavity should reveal no abnormalities; she should be free from all kinds of ulcers, and the mouth, anus, and genitals, in particular, should be carefully examined for traces of syphilis.

All these precepts only find their applicability when a selection can be made from several wet-nurses. When, however, as is frequently the case in small places, a person must be content when he is able to find one in the whole vicinity that offers herself for that situation, any one may then be taken that is free from febrile diseases and syphilis, and suffers from no demonstrable tuberculosis, secretes a sufficient quantity of milk, and has healthy nipples.

We now come to the important point, i. e., the milk and its chemical and microscopical qualifications.

The specific gravity of human milk averages 1.032. If it is allowed to stand quietly for some time, a thick, rich in fat, yellowish-white stratum, the so-called cream, will form on its upper surface, while the fluid found beneath it, poorer in fat and therefore specifically heavier, has a bluish-white color. Fresh woman's milk is bluish white or pure white, has a feebly sweetish taste and alkaline reaction; but, when it is allowed to stand in a temperature not too low, it grad-

ually becomes *neutral*, and finally reacts acid and forms in small lumps.

The essential difference between woman's milk and cow's milk does not consist in the differences of the quantities of the milk-sugar and of the butter, but in this: *that the casein of cow's milk, when it turns sour, curdles into large lumps, and even into a solid gelatinous mass; whereas the casein of woman's milk always coagulates into small lumps and loose flakes.*

In the microscopic examination, fresh human milk presents itself as a clear liquid, in which, as in an emulsion, fat globules, which have been called milk-globules, are suspended. Milk-globules vary in size, most of them having a diameter of 0.0012—0.0020", but if the milk is agitated a little, allowed to stand for several hours and then examined from the upper layer, along with the ordinary milk-globules, many large oil-globules will be found, the diameters of which increase to 0.03 or 0.04". (See Pl. II., Fig. 3.)

By the microscope alone, without the aid of chemical reagents, it is not possible for one to convince himself that the milk-globules have proper enveloping membranes. However, the presence of an enveloping membrane may be easily demonstrated, and, in fact, in two different ways. The one method, that of *Henle*, consists in the application of diluted acetic acid, and observing the acidulated milk under the microscope. The milk-globules in consequence undergo such an alteration, that, if they were only minute oil-drops, they would never be capable of manifesting. They become very much distorted, some caudated, others biscuit-shaped; on most, however, a minute drop becomes visible, which appears almost like a granule of the milk-globule; to this minute drop new ones become added on some places, so that around the now diminished milk-globule an entire circle of fine drops occasionally forms. By the application of concentrated acetic acid, the milk-globules fuse together into large drops. The second method is that of *E. Mitscherlich*, and consists in this: when fresh milk is agitated with ether, the milk remains unaltered, and the ether takes up only a small quantity of the fat. Were the milk a simple emulsion, it would surrender all its oil to the ether, and would itself be converted into a transparent, or at least a semitransparent liquid; if some substance is now added which possesses the power of dissolving the enveloping membrane, for example, caustic potash, or carbonate of the same, the ether then takes up all the oil, and an almost transparent liquid whey remains behind.

Besides the milk-globules, other elementary substances occur in the milk, namely, colostrum-corpuscles or *corps granuleux* of the French. Physiologically they are only found in the first few weeks after the

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delivery; they then diminish rapidly, and always reappear as soon as any sickness supervenes upon the confinement, or the nursing-woman is attacked by an acute febrile affection. They consist of irregular, conglomerated, very small oil-globules, held together by an amorphous, slightly-granular substance, and, according to *Henle*, are of 0.006" to 0.023" in diameter. Ether dissolves these much more readily than those of the milk-globules; acetic acid and caustic potash dissolve the granular intermediate substance, and disperse the oil-globules; iodine-water dyes the colostrum-corpuscles intensely yellow. There is, therefore, no doubt of these corpuscles being very small oil-globules embedded in an albuminous substance; a granule and an enveloping membrane cannot be demonstrated. (See Pl. II., Fig. 4.)

Along with these principal elementary substances of the milk, some solitary *epithelium-cells* and *mucous corpuscles* are also found in it; they only occur in larger quantities in local affections of the mammary gland.

Coagulable fibrine occurs only in milk containing blood.

Blood-corpuscles are seldom found in the milk, and ordinarily mingle with it only when erosions of the nipples exist. Fungi and infusoria are never found in fresh human milk.

As regards the chemical composition we have here: (1), *sugar of milk* ($C_{12}H_{22}O_{11}$), which in human milk is found from 3.2 to 6.2 per cent. Colostrum contains most of the milk-sugar (7 per cent.); its quantity, according to *Simon's* investigations, diminishes from month to month; it seldom, however, falls below 4 per cent.

(2.) *Fat, Butter*.—Butter forms the contents of the milk-globules, and may be tolerably well isolated by destroying the enveloping membrane (by churning). The individual fats of woman's milk have not yet been subjected to accurate analysis, but this much is known—that they very quickly become rancid and form volatile oleic acids. The amount of fat in human milk is not constant. *Simon* found from 2.53 up to 3.88 per cent. of butter; *Clemon* and *Scherer* on the fourth day after the delivery found 4.3 per cent., on the ninth 3.5 per cent., and on the twelfth 3.3 per cent.; *Chevalier* and *Henry* 3.5 per cent. In the colostrum *Simon* found 5.0 per cent. of butter. It is a remarkable fact that, by milking or artificial sucking, the milk that exudes last always contains more fat than that which has flowed out first, the other elements remaining unaltered. As this observation was first made in cows, it was supposed that the milk commenced to separate itself already in the fodder, so that the watery portion was greatest in the teats and less in quantity higher up; but, as *Reiset* also observed the same phenomenon in woman's milk, which at various intervals was extracted from the breast of a wet-nurse, the reason has therefore to be sought in some other cause than in the presumed mechanical cir-

cumstance, since simple explanation of dependence by virtue of the position of the breasts cannot be entertained.

According to my latest researches, the quantity of fat in woman's milk varies extraordinarily. I have succeeded in producing an extremely simple optical milk-test, with which an accurate estimation of the amount of cream can be made in two or three minutes, and indeed with a very small quantity of milk. A detailed description of the instrument and the applications that have hitherto been made of it, is to be found in an appropriate *brochure*, "A New Milk Test," F. Encke, 1862. In this manner the quantity of fat can be surely ascertained, and, what is of still more importance, with merely a couple of cubic centimeters of milk. The method hitherto employed for ascertaining the quantity of fat in human milk consisted in filling a galactometer, graduated by a scale of one hundred lines, with the milk pumped out from the breast, up to the 0 line, allowing it to stand quietly for twenty-four hours, and then to read off the thickness of the stratum of cream. Good woman's milk must show no less than three lines thickness of cream. This galactometer, however, has the disadvantages that the investigation can only be completed after twenty-four hours, and that it is often difficult and painful to pump out so large a quantity of milk from a wet-nurse's breast. With my optical milk-test both of these disadvantages are avoided.

Sugar of milk and butter contain no nitrogen, and are the so-called respiratory material of woman's milk.

(3.) *Casein* is found liquid in woman's milk, so long as it does not react acid; it becomes separated into light flakes as soon as a superabundant amount of lactic acid has formed through the decomposition of the milk-sugar. The milk of a good wet-nurse should contain 3 to 3.5 per cent. casein; the colostrum, however, contains a little more, nearly 4 per cent. It is very difficult and requires a long time to ascertain the chemical quantity of the casein, and therefore it may be appropriately omitted in the selection of a wet-nurse. Casein is the only nitrogenous substance found in the milk.

(4.) The soluble salts of human milk are chloride of sodium, chlorate of potassa, and alkaline phosphates, and in addition to these also potassium and sodium, which are found combined with the casein.

The insoluble salts are the phosphates of lime and of magnesia, which especially belong to the casein, and traces of oxide of iron and of fluor. 0.16 to 0.25 per cent. of salts, on an average, are found in human milk; 0.04 to 0.09 per cent. of which are soluble. The quantity of salts in the colostrum is greater than in woman's milk at a later stage of lactation.

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Vernois and *Bequerel* examined the milk of eighty-nine nursing-women, and furnish us with the following average numbers:

| | |
|------------------------------|--------|
| Density | 1032 |
| 1,000 parts of milk contain: | |
| Water..... | 889.08 |
| Sugar..... | 43.64 |
| Casein..... | 39.24 |
| Butter..... | 26.66 |
| Salts..... | 1.38 |

There are certain circumstances which possess a marked influence over the synthesis of the physiological milk, namely: 1, innervation; 2, the time that has elapsed since the confinement; 3, the manner of dieting the wet-nurse; and 4, the sexual functions.

(1.) *Innervation*.—The injurious influence which anger, fright, pain, nervous attacks, etc., are apt to exercise upon the milk, has been long known. The chemical changes which take place here have been less accurately investigated. In this respect the mammary gland resembles the lachrymal gland, which participates in almost every mental excitement. It is a fact that those children who drink at the breast of a wet-nurse who is mentally excited, soon after begin to cry violently, suffer from colic, get diarrhoea, and are sometimes attacked by convulsions. Whether the milk can thereby become so poisonous that children after partaking of it will die, must be doubted. When we bear in mind that a disproportionately large number of children, on the one hand, in general die suddenly, and, on the other hand, that there are nurses who almost daily become angry, we would therefore be more inclined to believe in an accidental concomitance than in an actual poisonous milk. I once had an hysterical woman under treatment, who suckled her child, and was not a little surprised, when, after one of her hysterical attacks, I pumped out a couple of teaspoonfuls of milk from her breasts, to find this milk almost totally transparent, like whey, and devoid of all saccharine taste. For the whole of that day she did not allow the child to drink at her breasts; and, twenty-four hours after, the usual, very thick, yellowish-white milk, rich in fat, was again present, on which the child thrived amazingly. It is also well known that cows give much less milk than usual when they are milked by strange persons. It is even said that they sometimes will give no milk at all when they are irritated during the milking, or annoyed by the presence of strangers. This must be due to a sudden diminution of the secretion and partial reabsorption of the secreted milk; for the milk cannot be voluntarily retained, since no muscular apparatus answering to that purpose exists. At any rate, it is evident enough from these statements that great attention must be bestowed upon

the psychical disposition of the wet-nurse, and that there are perfectly healthy, well-developed women who, nevertheless, are totally useless as wet-nurses.

(2.) *The time that has elapsed since the confinement* has a great influence upon the composition of the milk. The colostrum, or the first milk, in addition to the already-mentioned chemical bodies, contains also albumen, mucus, and large granular colostrum-corpuscles. The size of the milk-globules is still more unequal than is the case later on. Butter and salts are found in larger quantities than at a later period, and to this is due the slightly laxative effect of the colostrum. The milk-sugar decreases in quantity from month to month, and finally remains at 4 pr. c. as a minimum.

(3.) *The articles of food of the wet-nurse*, when they are insufficient, materially diminish the quantity of the milk in general, and the solid component parts in particular, so that a hungry wet-nurse supplies but little and watery milk of a light specific gravity. Butter and casein diminish in the highest degree.

Vernois and *Bequerel* have made numerous experiments in this direction, and found the following numerical differences:

| | In good nutrition. | In average nutrition. |
|----------------------------|--------------------|-----------------------|
| Specific gravity..... | 1,034.68 | 1,031.91 |
| Water..... | 883.86 | 891.80 |
| Solid component parts..... | 111.14 | 108.20 |
| Sugar..... | 42.97 | 43.88 |
| Butter..... | 26.88 | 25.92 |
| Casein..... | 39.96 | 36.88 |
| Salts..... | 1.33 | 1.52 |

It is difficult to decide whether individual articles of food make more milk than others, and, in this respect, no general rules can be established, because the assimilation of the various articles of food varies extremely in different individuals. This much, however, is certain, that the quality and quantity of the milk are not in exact relation to the amount of nitrogen contained in the food. A wet-nurse from the country, for instance, will give more and better milk when fed upon the coarsest meal and milk-diet than if she consumed the largest piece of roast-beef every day. The use of alcohol or alcoholic drinks imparts to the milk a stupefying qualification. The nurslings sleep much, are soon affected with cerebral irritation, digest badly, and become emaciated. In countries where beer is a popular drink, the women consider it impossible for them to suckle without consuming two or three mugs of beer daily. Those that were habituated to large quantities of beer in the unimpregnated condition, may continue to partake of it during lactation; they will produce

by it no injurious effects upon themselves nor upon the child. But when wet-nurses first learn to drink beer during lactation, and strive now with all their powers to consume a large quantity of it at one time, marked cerebral congestion and digestive disturbances are induced thereby, which, at any rate, have injurious effects upon the nursling.

Many remedies, which have been administered by the mouth, were subsequently detected in the milk. Most of the salts soluble in water, if they have not produced a profuse diarrhoea, are found in the milk again; iodide of potassium may be most easily and decisively demonstrated. The milk is agitated with a little starch-flour, and a few drops of nitric acid are added to the mixture, when the starch will instantly become converted into the well-known dark-brown iodine paste. Various coloring substances also pass over into the milk. In the milk of cows, fed with esparsette, a blue coloring matter forms, which is said to possess analogous properties to indigo.

Absinthium (wormwood) makes the milk bitter, the ethereal oils of garlic and of the thymicæ taint it with the odor of these vegetables. When a drastic purgative of any kind is administered to the wet-nurse, its effects, in most cases, will become apparent in the milk, and, through it, upon the child. The treatment of the nursling, by remedies administered to the mother, is, on the whole, a useless torture to the latter; when similar remedies are actually indicated, the child will surely be found to tolerate them just as well when they are administered to it in properly-divided doses directly from the medicine-glass, as when they have first been taken up by the circulation of the mother, and then secreted by the mammary glands in very small and certainly in not accurately definable quantities.

(4.) *The sexual functions* have an undoubted influence upon the secretion of the milk. If the wet-nurse menstruates, her milk in general will be sparsely secreted, but its solid component parts do not decrease in quantity; on the contrary, they become augmented. Butter and casein increase decidedly, milk-sugar and the salts demonstrably. The child thereby becomes somewhat restless, and displays the signs of disturbed digestion. But, after the termination of the menstruation, the former composition and quantity of the milk return, and for this reason it does not seem proper to immediately discharge a menstruating wet-nurse, as is so very frequently done; it is much more advisable to wait for the recurrence of the catamenia, and then only to discharge the nurse when the child remains indisposed for some time after the menstruation, and does not thrive in the same manner as before.

If pregnancy recurs, the continuance of lactation is of itself pro-

hibited, because the secretion of the milk immediately becomes very much diminished, and the milk again assumes the properties of colostrum. If, in exceptional cases, these changes do not take place, the nursling must nevertheless be weaned, because, otherwise, the growth of the foetus will be interfered with in the highest degree. Whether a coitus, upon which no gestation follows, is in itself injurious, I am unable to say; it does not seem possible, however.

Rapidly-recurring pregnancies exercise an injurious influence upon the secretion of the milk. On account of the anæmic and general hyperæsthesia of the women which originates therefrom, but little and insufficiently-nourishing milk is generated.

The milk, through certain diseases, undergoes important changes. Generally, in the milk of wet-nurses suffering from febrile affections, larger quantities of colostrum-corpules are found. Its quantity thereby decreases vastly in amount, or it dries up altogether. The solid component parts, however, do not disappear with equal rapidity with the watery, so that, at the invasion of a febrile disease, a milk, *very rich* in solids, is generated, and for that reason indigestions are very easily induced in the nursling. In general, the rule may be established, that the nursling should be left at the breast of the wet-nurse so long as she has milk, and the child suffers no very great digestive disturbances; it is, however, necessary to premise that the disease must be not of a contagious character—nor an acute exanthema, nor petechial typhus, nor syphilitic affection.

For the practical physician, it is entirely sufficient to prove the following properties of the milk: (1.) He fills his graduated galactometer with milk, and allows it to stand quietly covered for twenty-four hours, at the expiration of which time the stratum of cream should comprise at least three lines of the glass in thickness. (2.) He tests the milk with blue litmus and yellow turmeric paper. The litmus-paper should in no case become red; the turmeric-paper should turn slightly brown. (3.) He puts a few drops of the fresh milk upon the tongue. It should have an insipid and slightly-sweetish taste. (4.) He puts one drop of the milk under the microscope. If the wet-nurse has been confined for more than eight days previously, the colostrum-corpules and epithelium-cells should not be present at all, or only in very small numbers. The milk-globules ought not to be of too unequal sizes, nor be present in large quantities.

In general, it may be remarked that the state of health of the wet-nurse, her digestion, her sleep, her respiration, her skin, and her genitals, deserve a much greater attention than the chemical and morphological composition of the milk, and that it is more important for the physician to satisfy himself accurately of a sufficient quantity of milk

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