REMARKS ON HISTORICAL NOTICES OF ŒSYPUM, AND THERAPEUTIC EXPERIENCES WITH PURE ANHYDRIC LANOLIN.

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IN the history of materia medica we often find that some new discovery or theory overthrows a whole series of old-established customs for a time, but that further researches prove this proceeding to have been premature, and re-establish on a newer and better basis many of the old experiences.

This has been the case with fats. In olden times a great number had been used medicinally, and very complicated special indications had been laid down for them. When organic chemistry taught us the similarity in the composition of these substances, the old teachings seemed valueless, and we confined ourselves to the use of tallow, lard, wax, spermaceti, blubber, and a small selection of vegetable oils of various consistencies.

It is only in the course of the last few years that Professor O. Liebreich has prepared for wool-fat a brilliant re-entry into the *Pharmacopœia*. I need not here go into the interesting details of his exhaustive research—they are fresh in the memory of us all; but I will give some quotations from ancient medical literature which go to prove that Professor Liebreich is justified in saying that wool-fat, under the name of œsypum or œsypus, has long ago been extensively used in medicine.

We find the first complete account of it in Dioscorides (*Materia Medica*, lib. ii, cap. lxvi), and as the subject is there very thoroughly gone into, a complete translation of the chapter may prove of interest:

"The Greeks give the name of œsypum to the fat of raw wool. It is prepared in the following manner: soft fresh wool, that has not been treated with soap-root,¹ is washed with warm water, and when its impurities have been pressed out and collected in a wide-mouthed vessel, water is poured on, and it is violently beaten with a spoon or stirred with a stick until it foams, so that the dirty foam may be freely collected, on which then sea-water is poured. When the floating fat has settled, and has been collected in another earthen basin, the water in the first vessel is again stirred, the foam is again covered with sea-water, and finally taken out. This proceeding is repeated until all the fat has separated, and no more foam rises. The collected wool-fat is kneaded by hand, and any impurities removed; the water is gradually pressed out, and fresh poured on, the kneading being continued until the taste of a small portion laid on the tongue is only slightly astringent, not sharp, and until its appearance is white and fatty; it is then preserved in an earthen vessel. All this is done in burning sunshine. Some wash the strained fat with cold water, and rub it with the hands, much as women treat their wax-ointment; it thus becomes whiter. Others, again, boil the washed and clean wool with water over a weak fire in a copper vessel, collect the floating fat, and wash it with water in the way above described; after straining they place it with hot water in an earthen vessel in the sun, cover it with a linen cloth until it becomes white and sufficiently consistent. Others pour away the water after two days, and pour on fresh.

"Good wool-fat is slippery, fills abscesses, and softens, especially at the seat and the genitals, when mixed with melilotus and butter; laid on with wool it induces menstruation and parturition, it heals sores at the ears, and also—when mixed with goose-fat—at the genitals; it is an efficacious remedy for inflammation of the corners of the eye, and rash at the same locality; against swollen cheeks and loss of eyelashes.

"It can be burnt in a new pot until it gives off all fattiness and falls to ashes; soot is also collected from it in the way already described, which is advantageously mixed with medicaments for the eye."

This account of Dioscorides requires no further explanation; he describes what he has seen and experienced with the thoroughness and clearness that stamp his writings as truly classical in spite of all linguistic peculiarities.

Celsus (*De Medicinâ*) whose fifth book treats of drugs, does not mention œsypum in the pharmaco-dynamic part (*De Simplicibus Facultatibus*). On the other hand we meet with it here and there in special therapeutics as an ingredient of various prescriptions. Amongst the remedies for inducing suppuration, comes first the emplastrum tetrapharmacum (ceræ, sebi, picis, resinæ aa) and then the empl. enneapharmacum, to which œsypum together with butter, ox-marrow, wax and grease gives consistency. We further find œsypum as the chief ingredient of an ointment for fissura ani. This ointment contains also a wax prepared with oleum rosæ infusum. Another disease of the same locality necessitates the addition of chalcitis² to this ceratum rosaceum cum œsypo.

Galen devotes some remarks to *olovrous*, but is of opinion that it is in no way superior to the other fats. (Compare Spielmann, *Institutiones Materia Medica*, Argentorati, 1774, page 138.)

In the *Natural History* of the elder Pliny, œsypum is also described. He knows that it is produced by boiling, straining and bleaching in the sun, and mentions as a characteristic quality, that œsypum when rubbed with water, does not become liquid, but white and waxlike. The œsypum taken from Attis sheep is considered the best; but in these remarks—as in so many of Pliny's—we feel that he quotes what he has read in the writings of others, keeping back his own opinion. However, in his therapeutic notes we perceive the acuteness of the natural historian; he takes a pleasure in hinting at the absurdity of certain curative methods. Thus the conjecture dates from him, that in the production of œsypum the dirt collected in the wool may play as important a part as the perspiration of the sheep.

It may be seen from these quotations that wool-fat was a particular product of certain districts, of those, probably, in which soap and soap-root were not used for sheep-washing. During the entire Middle Ages there seems to have been no essential change in this respect. In Germany the preparation was but little known; in France, where we find it in use as late as the last century, Geoffroy³ mentions that it is not to be obtained of equally good quality from all the provinces. In England, the process of its production is described by Nich. Culpeper⁴ almost in the same way as by Dioscorides. The preparation remained longest in use in Spain, where we find it in the *Pharmacopœia* down to the end of last century. In the second edition of the *Pharmacopœia Hispanica* (Madrid, 1798), on page 70, an œsypus purificatus is described as an oily substance, obtained by washing sheep's wool, cleaned by boiling and straining, and made use of as an emollient, and for external application.⁵

In the first eighty years of our century, the remedy was only of interest from a historical point of view. No doubt the progress made in the methods of wool-washing was responsible for this neglect. By the use of potash, soap, and soda, the cleansing process was gradually perfected, but perfected at the cost of the fat, which, changed in quality, was thrown away with the washing water. But since technical chemistry has developed more and more, and since waste substances, instead of being thrown away, are made useful in the most varied branches of manufacture, the wool-washing water has at last been found to be most valuable.

In the year 1880, Dr. Fr. Elsner⁶ writes that it has been recognised as a source from which potash can be obtained. When the potash, which is formed partly from the wool-perspiration, partly from the added ley, has been obtained, the water is subjected to treatment for the wool-fat still contained in it. Elsner, who as chemist to the "Leipziger Wollkammerei" was well acquainted with all the details of the process, states especially that the wool-fat must not be entirely saponified. Already before this F. Hartmann⁷ had proved the existence of cholesterol in wool-fat, and Ernst Schulze⁸ that of the combination called by him ischolesterin, and the latter had at the same time proved that these substances not only occur in the wool-fat in a free state (as an unsaponifiable portion), but also as a compound ether of fatty acids

² A mineral, used as an escharotic, which crystallises in mines from out of the underground water, etc., and which chiefly consists of very impure green vitriol.

³ *Suite de la Matière Médicale*, Paris, 1756, vol. vi, p. 121.

⁴ *Pharmacopœia Londinensis*, or the *London Dispensatory*, London, 1675, p. 264. Compare T. H. Powell, *Pharm. Journal and Trans.*, 1856, November 13th, p. 404.

⁵ Compare *Pharmacopœia Batava*, Lipsiæ, 1824, i, p. 231. G. A. Richter, *Ausführliche Arzneimittel-Lehre*, Wien, 1832, vol. i, p. 227. Geiger, *Pharmacopœia Universalis*, Heidelberg, 1835-45, i, 191, ii, 589.

⁶ *Pharmaceutische Zeitung*, 25 Jahrg., Berlin, 1880, p. 522. Compare *Jahresbericht der Pharmacognosie*, etc., Göttingen, 1882, p. 114.

⁷ *Ueber den Fettschweiss der Schafwolle*, Inaug. Diss., Göttingen, 1868.

⁸ *Berichte der Deutschen Chemischen Gesellschaft zu Berlin*, 6 Jahrg., Berlin, 1873, p. 251; compare also Hoppe-Seyler, *Physiologische Chemie*, iv Theil, Berlin, 1881, p. 762, where the author withdraws the doubts previously expressed by him as to the existence of ischolesterin, and declares them to be entirely dispelled by the preparations shown by E. Schulze.

¹ The saponaceous root of *Gypsophila Struthium*, L.

of high molecular weight and of oleic acid. The separation of these cholesterin-fats from the impurities has been made practicable during the last few years, and has been materially assisted by the important researches carried out in the Pharmacological Institute of the Berlin University on the fats of the animal skin, and on the cholesterin-fats as skin-ointment in the physiological meaning of the word.

In the lanolinum purissimum anhydricum (Liebreich) a preparation has been brought into use which is not only as superior to the best Attic oesypum ever seen by Dioscorides, as are our modern candles to the tallow dips of our grandfathers, but which also—by its proved physiological value—presents the best basis for ointments hitherto known.

During the autumn I had occasion to try the purified lanolin, and some ointments prepared with it, on patients. I may say at once that I began my trials with a certain scepticism: I have too often been disappointed by new remedies, even where these have been well recommended, and it so happened that during the last year a number of fats for ointment had passed through my hands. Among the latter had been a specimen of the centrifugated lanolin—the kind first brought in the market—of which, at the time, I formed rather a poor opinion. I was therefore really surprised to find that the very first trials with the purified preparation turned out well. This favourable opinion has been confirmed by further examination. Lanolin is no panacea, nor can it entirely replace the other fats, but in many cases it certainly brings about a quicker and more decided cure than the usual remedies.

I will begin with a simple case, and will describe the application for pruritus and prurigo senilis. The case of pruritus was that of a woman, aged about 80, whom I had repeatedly treated, partly with internal applications (natrium bicarbonicum, kalium bitartaricum, kalium bromatum, radix valerianæ), partly with baths, and finally with inunctions of fats, of which latter only cod-liver oil—disagreeable in various ways—could relieve the irritation. This new attack had followed upon mental anxiety. I now prescribed lanolin. A short time after the first application the itching ceased, quiet sleep set in even the first night, and after a few days the condition had improved so much that the patient was only now and then obliged to apply a small quantity of lanolin. In this case I returned to the use of the less expensive centrifugated lanolin with satisfactory results.

A woman, aged 88, with prurigo senilis, was admitted into my hospital. The skin was covered everywhere with papules and pigment-spots from former eruptions; the patient was thin and worn through itching and sleeplessness, and the general condition was very unsatisfactory. No trace of vermin was found. Scarcely a year passes without my having several similar cases from the poorer classes, and my experience has invariably been that after some time, in consequence of the more generous diet and the careful skin-treatment, they are dismissed as cured. The remedies I was formerly in the habit of using were inunctions with grease, and in the more serious cases cod-liver oil poultices. In this case I at once turned to the lanolinum purissimum anhydricum, of which I had an ointment prepared with 50 per cent. adeps suillus, and ordered it to be applied to a quarter of the body every evening. An improvement set in after a day or two; appetite and sleep returned; after a week the patient had so far recovered that a warm bath could be ordered. After four weeks the patient's condition was normal, the embrocations were discontinued, and she only now and then complained of a slight itching at the neck or the arms, which was promptly put a stop to by the application of lanolin.

In the case of simple abrasions and excoriations I use either an inunction of lanolin or else lay it on with the help of a puff of cotton-wool. It acts as a protective cover, eases the pain, and favours the formation of new epidermis by softening and distending the surrounding skin. Deeper injuries of course require antiseptic treatment, and for these I have not yet made use of lanolin, though it might possibly with advantage take the place of glycerine, castor-oil, and resin in the preparation of antiseptic gauzes.

A lanoliment consisting of anhydric lanolin with 10 per cent. of oxide of zinc was applied instead of the usual zinc ointment. It takes the place of the latter in every respect, and possesses the advantage of sticking to damp surfaces and being easily rubbed into them. Instead of ceratum labiale, the lanoliment oxydi zincici became a great favourite; it makes the lips supple, and has a neutral taste.

Still better results were achieved with a boric acid lanoliment, of which I applied both a 10 per cent. and a 20 per cent. mixture. With the weaker ointment I treated two cases of herpes circinatus. The one case was that of an elderly man who was employed in a cigar-shop, and whose wrists and hands had been for some weeks the seat

of a well-developed exanthem. The other case was a woman who, on wearing a red woollen under-jacket, had developed a quantity of irritating but dry circular efflorescences (not pityriasis versicolor) on her shoulders and the upper part of the back. Both cases were cured within a week. The 20 per cent. boric ointment has done specially good service in a case of recurrent eczema, of which I will give a more detailed account.

N. N., a married woman, aged 38, first came to me for treatment in the autumn of 1885. At that time she had been suffering for six weeks from a very violent eczema, which had spread over her face, ears, head, neck, and throat, besides her hands. The places attacked were mostly covered with a purulent crust; the eyelids and outer ears were much swollen; the irritation was unbearable. Under the crust were wet, slightly infiltrated, and sometimes bleeding surfaces; at the edges the exanthem was in some places advancing, and was bordered by a curved row of small pustules. At both the ears the exanthem encroached upon the outer auditory passage, the opening of which was covered with bloody rents and exfoliating pieces of epidermis, and was the seat of the most terrible irritation.

The patient, who before this had been a blooming young woman, was very worn and thin. In consequence of the continued sleeplessness and unceasing itching, she was in a sad state of weakness and nervous irritability. Medical advice had been taken from the beginning, but had as yet been unsuccessful; however, in a short time, by the continued application of goulard-water compresses I was able to give relief, followed after some weeks by complete restoration. During the year that followed, the patient did not suffer in health for a single day until the autumn; when I was called in I found her in bed, where she had been for three days, the eczema was fully developed at all the old places, in the middle a crust was beginning to form; damp spots everywhere, and round all a zone three to four centimètres wide, of tight translucent pustules. The eyelids were swollen, especially the right one, which could not be opened. There was constant irritation. The patient, remembering her former experience, had been applying compresses of goulard-water from the beginning, but had experienced no relief. I at once put a stop to treatment with water in any shape, and myself applied the following lanoliment: R Acidii borici pulverati, 20.0; lanolini purissimi anhydr. (Liebreich), 80.0. M.D.s.

The ointment was applied pretty thickly, and was easily rubbed in, even at the damp spots. A feeling of moderate burning immediately set in, which however was felt as a relief from the former irritation. After a quarter of an hour the irritation had become bearable, and I left the patient. On the sixth day she wrote to me as follows: "Let me thank you for the wonderful ointment, which really has had an extraordinary effect. The itching became less irritating at once, and the swelling has gradually gone down, so that it has now almost disappeared with the pustules."

A week later I saw the patient once more. There was no fresh eruption, the skin was smooth and soft all over; only a slight susceptibility to draughts and to water remained, in consequence of which the ointment was still occasionally applied.

In the case of bedridden female patients, whose long hair is very troublesome to comb, on account of its entanglement, the following pomade has done good service: R Lanolini puriss. anhydr. (Liebreich) 15.00; cetacei; olei amygdalarum aa 5.00; olei bergamiæ gtt. v; olei lavandulæ gtt. xv. M. f. l. a. ungt. D. s.

Tar-remedies can also with advantage be applied as lanoliments, as may be seen by the following example. N. N., a naval cadet, had been attacked whilst on a voyage in the tropics eight or nine months ago, by a dry eczema on his hands and face, the nose especially having a florid appearance. The following ointment was prescribed: R Ung. basilicæ nigri 5.0; lanolini puriss. anhydr. 45.0 (Liebreich). M. D. s. (The first ingredient is u. basilicum Ph. Germ., with an addition of 12 per cent. of pix liquida, and thus almost identical with the emplastrum tetrapharmacum of Celsus.) In a fortnight the eczema was cured, and has never appeared again. An ergotin-ointment, which I often prescribe in cases of hemorrhoids, has also been prepared with lanolin, the result being highly satisfactory.

Finally, I have made use of a lanolimentum hydrargyri cinereum, prepared with 10 per cent. of fat, sometimes in the form mentioned, sometimes worked in with twenty times its bulk of anhydric lanolin. The second form of the ointment proved of great value where there were vermin. Only a few inunctions were required to exterminate numerous settlements of pediculi pubis, and the disagreeable skin-irritation that so often ensues upon the exhibition of the ordinary mercurial ointment did not once occur. This ointment was also applied in a case of chronic infiltration round the tendo Achillis, after the

healing of an abscess, and the result was that absorption was complete within eight days.

In a case of leucorrhœa with a highly irritating secretion (where a gonorrhœal infection could not be traced) I applied the stronger mercurial lanoliment, with good result. No suitable cases of syphilis came under my notice during this time.

I have thought it well to describe these therapeutic experiences at length, not in the hope of bringing lanolin into general use—for this my help may well be spared—but because, having at the first re-introduction of wool-fat expressed rather prematurely a contemptuous opinion of it, I think it my duty to state the facts that have caused me to alter my views. I have found pure lanolin to be a valuable remedy that I could now ill spare in my practice.

FURTHER REMARKS

ON

THE RADICAL CURE OF HERNIA BY INJECTION.

INCLUDING A DESCRIPTION OF A MODE OF OPERATING WITHOUT THE USE OF AN ANÆSTHETIC, AND WITHOUT CONFINING THE PATIENT TO HIS BED OR TO THE HOUSE.

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THE following paper may be taken as supplementary to one already published in the JOURNAL (1885, vol. ii, page 543), and originally read at the meeting of the British Medical Association at Cardiff.

I have first to say that I found the combination of cannula and syringe somewhat awkward in practice; once or twice the two came apart as I was withdrawing the cannula, allowing an uncertain quantity of the injected fluid to escape, and compelling me to guess vaguely how much more to inject to make up for the loss. For this reason I caused to be made the injection-syringe described in the JOURNAL for July 17th, 1886. This I now show to you, and you see it is a probe, cannula, and syringe all in one instrument, besides having certain other advantages, such as requiring only one hand to fill, empty, and otherwise manipulate it, and being very easily aseptised.

I have further to report three specially interesting cases, all in adults, in one of which I used the injection only, while in another I felt it prudent to refrain from using the injection, and to employ merely the suture, and in a third I adopted an entirely different mode of operating—one which neither required the use of an anæsthetic nor prevented the patient from doing his business. The first and second cases were operated on at nearly the same time, namely, March 16th and April 14th, 1886. The successful case was a young adult man, with a left inguinal hernia of moderate size, coming through a canal also of moderate size. He was admitted into the West London Hospital, and a simple injection of concentrated decoction of oak-bark was thrown into his inguinal canal, no suture being placed in the canal-walls or apertures. A thickening rapidly formed at the site of injection, which felt very much like a crown-piece wrapped up in a piece of lint. This gradually got less, but some months after the operation, he had had no return of either the hernial impulse or hernial swelling. He usually wears a truss by way of precaution, but I shall not fear to let him discard it when next I see him. The other and less fortunate case was that of a very stout gentleman, who came up from Yorkshire to be operated on. I may mention, by the way, that his brother had suffered from hernia, and been cured by injection in America. In ten years of operative experience, I have never had so many minor misfortunes and pieces of what I will call, out of charity to myself, "ill-luck" as I suffered in connection with this patient; they all arose out of a bad commencement. In giving the patient a list of two or three lodging-houses, I included one which, though excellent in itself, was not a good one for our particular purpose. I recollected this immediately; but, expecting to see the patient next day, and having arranged not to operate for a day or two, I thought I should have an opportunity of setting things right. Unfortunately, I did not hear again from my patient till the eve of the date fixed for the operation, and he had in the meantime taken rooms with an exceedingly bad light. A corner window on the ground floor, looking into the bottom

of a kind of pit, and the enormous bed in the room, when placed in such light as there was, blocked the way in such a manner as almost to paralyse the nurse and greatly interfere with the assistant. Further, the eventful morning was dark and dull, even for London; and we had to use candle-light. My assistant was more than fully occupied in endeavours to retract the fatty walls of the wound; these were so thick and deep that it was not until I had made an incision three if not four times as long as the usual one that I could get proper access to the inguinal ring and its pillars. When I now proceeded to put in the thick catgut suture with a handled needle, the shank of the latter bent with the effort necessary to bring the eye into view after it had passed through the pillars. There was a good deal of oozing, and the nurse being occupied in holding the candle, while the assistant's hands were monopolised by the retractors, I had to sponge for myself. When the suture was properly inserted, I paused to reflect ere I injected a powerful irritant into the inguinal canal after all the parts had necessarily been subjected to much rough usage.

Had we been engaged on some necessary operation, such as an amputation, to go on and make a thorough finish of it would have been a matter of course; but here was a very different state of things. My main object in doing these operations of injection is to find a really safe and reasonably certain mode of doing the radical cure of hernia. I would therefore infinitely rather fail to do any good than risk doing any harm. Therefore, considering the unusual stoutness of my patient, the large wound it had been necessary to make, the rough usage to which it had been subjected, the unreliableness of the antiseptic precautions which it had been possible to take under the circumstances, and the doubt whether, even under the most favourable conditions, injection would do much good to a hernia coming through such an immense aperture (it would admit four fingers), I determined to refrain from exposing my patient to the risks associated with injection into his canal. Had I had him on the hospital operating-table, in an excellent light and surrounded by plenty of assistance, I should probably have there and then tied the neck of the sac, excised the fundus of it, sutured the ring, and confidently expected a good result. But this course was here at present out of the question, although I had obtained my patient's leave to do as I liked. I therefore merely put a little of the injection on the sutured ring, placed a drainage-tube, sponged and cleansed the wound with ¹⁰⁰⁰ sublimate lotion, and dressed with turf-moss dressing, etc., sublimated in the usual way.

Very glad I was afterwards that I had refrained from putting the injection into the canal, otherwise I should have probably had to deal with an abscess in the abdominal wall between the muscles, for the wound did not heal by first intention, and there was a good deal of suppurative with some sloughing. In addition to this, an attack of pneumonia with rusty sputa, high temperature, etc., developed in a few days, and kept the patient incessantly coughing, besides causing me some anxiety, and compelling me to pay the most rigorous attention to the wound, with a view to preventing septic absorption. I used to dress it three times a day. The pneumonia was partly aggravated by his being kept always on his back with the foot of the bed raised, and disappeared rapidly as soon as I allowed him to sit up a little. The hernia remained up for a fortnight, and then came down in a fit of coughing.

The suture had given way, and I removed it through the wound, which was still unhealed. I then let him sit up in bed, and all signs of the pneumonia quickly vanished, showing that whatever had been its original cause, it had been kept up and increased by the statical effect of the continued supine position with the lower extremities raised, and the head and chest lowered. A good deal of effusion had taken place about the ring, which was diminished in capacity by the thickening, so that I hoped a truss would now keep up the hernia (which would be some advantage gained by the operation). During the few days the patient remained in town, walking about and standing, this hope seemed likely to be fulfilled; but our misfortunes were not at an end. The new truss, which he was now wearing with success, was sent to the makers, that it might come back with another like it the next day when he had to return to the north. But the makers sent away the truss to some factory out of London, and when he was about to go to the train, they would give him neither the truss nor the duplicate, nor did they have in the shop another truss which was quite effective. When eventually he got the two trusses, he being then in Leeds, neither the new one nor the old one would keep up his hernia. There is really more to be learnt from this case than from the successful ones individually. From it I conclude that, when the patient is very stout, a first-class light, an extra assistant and an extra strong needle are required.

Secondly, I see that, in certain patients, unless it is possible to