levels at these three times were 75.4, 69.9, and 74.7 per cent. Since the physiological hydraemia becomes less during the latter part of pregnancy, and still less after delivery, the fall in haemoglobin level occurring just after labour must be due to the blood loss at parturition. Actually seven out of the thirty-four cases showed a rise forty-eight hours after delivery, while in twenty-seven the haemoglobin fell in varying degree, the maximum fall being 28 per cent. Between forty-eight hours and the ninth day after delivery no case showed a fall, and the average rise in haemoglobin was 4.8 per cent. This rise is due to progressive decrease in hydraemia and to haemoglobin regeneration following the haemorrhage of parturition.

Since hydraemia becomes less before term and during the puerperium, it might be deduced that the difference in haemoglobin level during pregnancy and a few days after delivery would indicate the extent of the blood loss at parturition, and therefore might give a clue as to the probable course of the haemoglobin level during the first few weeks of the puerperium. We have data on fifteen women to illustrate this point, and while one cannot draw definite conclusions from such a small number the results are at least suggestive. Seven of the fifteen showed a fall in haemoglobin or a rise of less than 5 per cent. between pregnancy and a few days after delivery. In these the rise which occurred between pregnancy and a few weeks after delivery was 6 per cent. In this group the blood loss at parturition was probably severe, since reduction in the physiological hydraemia resulted in little or no change in the haemoglobin level shortly after delivery. Consequently the further reduction in hydraemia during the puerperium produced only a slight rise in haemoglobin above the level in pregnancy. Eight of the fifteen showed a rise of 5 per cent. or more between pregnancy and the first few days of the puerperium. In these blood loss at parturition was probably slight, and the average rise in the haemoglobin level between pregnancy and a few weeks after delivery was 21 per cent.

Conclusions

1. The average haemoglobin levels of poor women fell during pregnancy up to the thirty-seventh week of gestation, and then rose slightly before delivery.
2. A rise in the haemoglobin level occurred from forty-eight hours post partum to six to eleven months after delivery.
3. Even in women of the poor classes the transference of iron from the mother to the uterus and its contents is compensated wholly or to a large extent by dietary iron.
4. In cases where this demand exceeds the retention of dietary iron, the degree of maternal iron deficiency which results is only slight.
5. Where hypochromic anaemia in pregnancy is marked, anaemia has probably existed before the pregnancy, but has been made more apparent by physiological hydraemia.
6. Therefore, the conception that uncomplicated pregnancy frequently produces a severe degree of hypochromic anaemia should be discarded.
7. The blood loss at parturition varies greatly in degree and often produces severe hypochromic anaemia.

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PREVENTIVE MEASURES IN DERMATOLOGY*

BY

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The discussion which I have the privilege of opening concerns "Preventive Measures in Dermatology." At the first hearing that phrase has a novel sound, but I am not introducing yet another subdivision of the science and art of medicine: 450 years before Christ the writer or writers of the early chapters of Leviticus were concerned with the prevention of a disease which has cutaneous manifestations. The whole fifty-nine verses of the thirteenth chapter of Leviticus are devoted to the differential diagnosis of leprosy, the isolation of the patient once the disease has been diagnosed, and the purification of his clothing. One could quote several relevant examples of the preventive measures which have been taken in former centuries, but I will merely refer to the introduction of the quarantine system by the Venetians in A.D. 1403 in order to prevent the spread of bubonic plague—a disease which is inoculated through the skin by the bite of an infected flea; to the Turkish custom described in 1717 by Lady Wortley Montague¹ whereby persons were inoculated with variolous matter and after having developed a mild attack of smallpox were immune to the disease; and to Jenner's work on variola and vaccinia.

I have mentioned these few well-known facts to emphasize that although it was not until the middle of the

* Read in opening a discussion in the Section of Dermatology at the Annual Meeting of the British Medical Association, Oxford, 1936.

nineteenth century that, under the influence of Ferdinand Hebra, dermatology became a recognized specialty, nevertheless it was in the sphere of diseases having cutaneous manifestations that the science of preventive medicine was born.

Psoriasis

To-day our discussion is to centre not on the protection of the community from contagious diseases, but on the protection of the individual from dermatological vicissitudes, and I think it will be proper to commence by a brief consideration of a few of the problems presented by an inherited disease—psoriasis. In at least one textbook it is stated that psoriasis does not constitute a bar to marriage, but I have known of not a few instances where women have deliberately refrained from having children lest their offspring should be affected with the disease. Further, all of us must know of families in which the first-born has developed psoriasis, and the parents have been so distressed to find that the taint has been transmitted to the child that, rightly or wrongly, they have taken steps to prevent a further conception. Admittedly, in some cases the presence of psoriasis in the family furnishes an excuse for infecundity. The father may regard children as being hostages to fortune and a source of financial encumbrance, while the mother may not wish to face again the discomforts of pregnancy and the pain of parturition. But in other cases the fear of transmitting the disease to the children is justifiable and worthy of our consideration. Cockayne,² in his book *Inherited Abnormalities of the Skin*, agrees that there is strong evidence that psoriasis is inherited, and quotes certain authors whose work has shown that the disease behaves as a Mendelian dominant characteristic.

"If, as many believe, psoriasis is due to an inherited predisposition and an external cause as well, the dominance may really be complete and regular, the excess of normal sibs and the conductors having inherited the predisposition, but not having been exposed to the external cause."

Heiner³ has given the pedigree of two unrelated psoriatic persons who married. They had three sons: two of the sons had psoriasis; the third son was apparently normal, but his son suffered from the disease. In all, five of the grandchildren had psoriasis.

I have mentioned these matters so that we may discuss the problem with which we are occasionally faced in practice, but which, I think, has not been discussed recently at a dermatological meeting: the problem may be briefly and rhetorically stated in these words, "should psoriatic persons marry?" My own view is that two persons suffering from fairly severe psoriasis should not marry; and it is doubtful whether marriage should take place between a psoriatic person and one who, although he or she appears to be normal, has near blood relations suffering from the disease. We must remember that there are degrees of severity of psoriasis. Some people's lives become burdensome owing to the repeated and severe efflorescences of the eruption; others scarcely suffer at all. Does the severity of a psoriasis depend on the inherited characteristics of the individual; on his environment or on his lack of adaption both mentally and physically to that environment, or on causes I have not mentioned?

Fat Metabolism

These matters appear to me to be ripe for discussion, particularly in view of the knowledge with regard to the disease which has been recently acquired. In discussing the matter we should remember that Grütz and Bürger⁴ have recently shown that psoriasis patients have an abnormal fat metabolism.

If 100 grams of olive oil in which 5 grams of cholesterol have been dissolved are given to a man who suffers from psoriasis and a similar potion is given to a normal person, and if the blood of these subjects is examined at four, eight and twenty-four-hourly intervals after the drink has been taken, and the results are compared, the psoriatic will show an average of 40 per cent. increase in the total fat, cholesterol, and phosphatide content of his serum. In consequence, Grütz has suggested that a diet from which fats are almost completely excluded is a rational method of treating the disease. He recommends that the amount of fat eaten should be reduced to 20 grams a day for adults and 10 grams a day for children.

The reports with regard to this treatment are conflicting. Some authorities regard the diet as being beneficial; others have stated that the results are negligible. So much depends on the co-operation of the patient that it is difficult to assess the value of the treatment. In many cases the patient will not consent to the restriction of his fats unless he is treated as an in-patient; and once he has been removed to a hospital or nursing home the mental and physical trauma of everyday life are lessened, and this protection from his accustomed stresses is in itself beneficial, especially if the eruption from which he suffers is relatively acute.

Ultra-violet Light and Diet

In this discussion we should not forget the influence of climate on the disease. It is rare for an Englishman who suffers from psoriasis to show any manifestation of it whilst he is in a tropical climate; the psoriatic skin seems to require for its full health an abnormal amount of sunlight, and apropos of this I should like to ask if your experience agrees with mine that regular exposures to ultra-violet light are the best method of preventing recurrences of the eruption? In your experience, does regular exposure to the ultra-violet rays cause an immunity which persists, or do the exposures to the rays become less efficacious in preventing the disease after some months have elapsed?

I should like to leave this subject for one which is perhaps of more general interest, and to discuss briefly some common errors of diet which, in my experience, have contributed to the development and/or the persistence of cutaneous diseases. First, there comes the question of the meals which are commonly eaten. In my experience men are not so addicted to food faddism as women. We still enjoy our bacon-and-egg breakfast, the light luncheon in the middle of the day, and the heavy meal with its preponderance of proteins at night. And on this not-too-well-balanced regimen we manage to keep fairly fit. But, so far as the upper middle classes are concerned, the diet of the women is changing—or has changed. No longer does the lady of the house have the same breakfast as her husband; half a grape-fruit or some orange-juice, some thin dry toast, or rye bread, and a cup of tea or coffee suffice for her matutinal needs. For lunch she appears to enjoy lettuce, cheese, and biscuits or some similar light fare; while afternoon tea is now but a pale shadow of its former self. But at dinner she keeps pace with her husband. The result is that after one meal her stomach has to cope with approximately 60 to 70 per cent. of her daily nutriment. I have seen at least a dozen cases where rosacea or urticarial eruptions were attributable to this unbalanced ingestion of food, which have yielded readily to treatment when the patient learnt that it was better to spread her food intake over the three meals of the day rather than to consume at one sitting the major part of her sustenance. It would be interesting to know if other members of this Section have seen cases similar to these.

Alimentary Idiosyncratic Eczema

It is impossible in the time allowed to refer to the many interesting problems associated with over-nourishment and under-nourishment, although these could very properly be included in a discussion on the prevention of cutaneous diseases; similarly, it is impossible adequately to discuss the prevention of diseases by the elimination of certain foodstuffs from the patient's diet. I should, however, like to make brief mention of what has been called alimentary idiosyncratic eczema, for I believe that as our knowledge increases we shall be able to prevent a large number of cases of this nature, and if the theories I am going to lay before you to-day are correct it is already in our power, by adequate supervision, to prevent the development of many of these forms of eczema. Bloch¹ suggested three postulates which have to be fulfilled before it can be said that a given case of eczema is due to food allergy:

1. The eczema must be made worse by every ingestion of the suspected substance.
2. When the suspected food is withheld the eczema must disappear.
3. The allergic nature of the eczema must be proved by passive transference (Prausnitz-Kuestner reaction).

I think that most of us will agree that these postulates are fair, but it is often very difficult to ascertain that they are fulfilled. So far as infantile eczema is concerned the consensus of opinion seems to be that the majority of cases are due to alimentary idiosyncrasy; and many persons will say that the patient's family history usually reveals a tendency to allergic disorders. Some clinicians believe that the protein element in the diet, and particularly lactalbumin, is usually responsible; others inculpate the fatty elements; while in a few cases sugar has been shown to be the cause of the eczema.

I do not think that Urbach's² work has received sufficient attention in this country. He divides cases of infantile eczema into four groups: first, the over-nourished fat child whose eczema usually responds well if the amount of milk, whether from the breast or the cow, is reduced to normal proportions, and the patient is given gruel or groats for one of the feeds instead of milk. In the second category he places the dystrophic, marasmic, and poorly nourished infants. These children usually have the dry, disseminated type of eczema, and usually have gastric and intestinal disturbances. As soon as adequate treatment is given on the lines advocated by paediatricians (dyspeptic symptoms being combated by such measures as the giving of buttermilk, albumin-milk, etc., and the symptoms of enteritis checked by controlling the carbohydrate or fat intake) then the eczema begins to disappear. A certain number of these children suffer from under-nutrition, and here the diet has to be slowly increased until it is adequate. In the third group he includes the infants with exudative eczematoid eruptions who show crusted lesions on the scalp and face. These children usually have a dry skin and their eczema is frequently the first stage in the development of Besnier's prurigo. They are often so allergic to one of the constituents of milk that they may have to be brought up on gruel, cream of wheat, bananas, and, as soon as the teeth appear, small quantities of bread-and-butter and weak tea. In the fourth group Urbach places infants who have eczema but are neither under weight nor over weight, and have no exudative or atrophic tendencies; the cause of their eczema is frequently undiscovered, and only occasionally do they benefit from dietetic therapeutic measures. In all these types Urbach emphasizes that local treatment must be used as well as general treatment, and he admits, as we all admit, that "again and again failure has rewarded my sincerest efforts to help these children."

Biochemical Research

One of the greatest difficulties in dermatology in this country at present is that there seems to be a dearth of trained biochemists who have a sufficient knowledge of our subject to be of use to us. There is a tremendous field for biochemical research in dermatological problems, and I am sure that a concentration of biochemical and dermatological research on the problems of infantile eczema would result in the discovering of methods of preventing many of these forms of eczema. Talbot³ and Shannon⁴ have demonstrated that infantile eczema may result from sensitization to food proteins contained in the mother's dietary, and transmitted to the infant through the breast milk. Ratner⁵ has shown that some babies are sensitized *in utero*. If we can discover by means more certain than a perusal of the family history that an infant is likely to develop what may be called endogenous eczema then the child can be kept under observation and passed to a wet-nurse instead of being put on to dried milk when its mother is tired of feeding it; and similarly other measures may be devised to prevent the onset of a disease which causes a great deal of discomfort to the baby himself and a great deal of distress to his parents.

Prevention of Occupational Dermatitis

In so far as the dermatergoses are concerned prophylactic measures fall into three categories:

1. The selection of employees.
2. The selection of materials, and
3. Active methods of prophylaxis.

First, with regard to the men, it would probably reduce the incidence of occupational dermatitis to a small extent if hyperidrotic subjects, persons who suffer from pityrosporon infections, and those who suffer from xerodermia, prurigo, hyper- and hypo-thyroidism, were excluded from entering dangerous trades. Certainly no one who had suffered from eczema in infancy or childhood, or who had an allergic diathesis, should be allowed to handle materials to which persons readily become sensitized. Hyperidrosis, in my opinion, is a very real disadvantage to a man who is handling, for example, cement or lime, and in a certain proportion of cases of occupational dermatitis that I have seen the patient has had this symptom.

Secondly, with regard to materials; every factory and every trade has its own problems with regard to these, but, to take only two examples, it is generally recognized in the french-polishing trade that men become more readily sensitized to turpentine-substitute than they do to pure turpentine; while in the chemical industry it is recognized that combinations of certain chemicals readily produce eruptions, while taken individually these chemicals are relatively innocuous. For example, in a personal communication Dr. Thelwall Jones of Widnes has told me that whilst chlorine and naphthalene alone seldom cause trouble, the fumes of chlorinated naphthalene are a potent source of "chlor-acne" if there is slackness in carrying out the efficient prophylactic measures that have been devised.

Active Prophylaxis

For the third consideration—active methods of prophylaxis—there is much that can be done. The first requisite is cleanliness. Other things being equal, it is the careless workman who leaves particles of dust or dried liquids ingrained in the folds of his skin who is more prone to become sensitized than the man who scrupulously removes the dirt from his hands. The men should be encouraged to wash their hands with a suitable soap when they leave work at midday for their dinner, and when they stop work in the evening. This is an apparently simple problem, but actually a difficult one. In one workshop

the manager informed me that on three occasions he had put up notices advising the men in respect of this matter. The men regarded this information as being a reflection on their personal habits, and every time the notice was put up it was surreptitiously removed within a few hours. A point which is obvious to us, but less obvious to the layman, is this: oils and grease, stains, etc., cannot be easily removed by soap unless the soap contains an excess of alkali, and perhaps some other chemical solvent, or grit. For obvious reasons it is useless to attempt to reduce the incidence of dermatitis by supplying the employees with a highly alkaline soap, the use of which softens the horny layer of the epidermis, and thereby assists the penetration of deleterious agents. But we are between Scylla and Charybdis in this matter, for the average man greatly prefers to use the soap which will cleanse his hands most rapidly, and if good soap is provided by an employer it is frequently unused. There have recently been put on the market some quite useful non-solid soaps which, if used before work is commenced, coat the hands with a thin layer of fat which, to a slight degree, retards the penetration of deleterious liquids, and may assist in facilitating the removal of dirt when the day's work is done. The application of lanolin to the hands at night is probably one of the simplest and most satisfactory prophylactic measures yet evolved.

There is a fortune awaiting the person who discovers a material which is as flexible as rubber and yet is untearable. At present, the use of gloves often produces what it seeks to obviate. I do not think I am betraying a professional confidence when I tell you that rubber gloves were supplied to some of the men who were working in the construction of the Mersey tunnel, an undertaking which necessitated the use of thousands of tons of cement. But the gloves tore, or the cement entered in some other way, and formed a poultice inside the glove, and the deleterious effect was thereby increased. This criticism necessarily applies to the use of gloves in many trades, other than cement working.

The use of sprays is increasing. Paint and varnish, which formerly were applied with a brush, are nowadays applied by means of high-pressure apparatus with a trigger control, and the number of commercial substances applied by sprays will probably greatly increase. The men who spray are notoriously careless. Consider, for instance, the cellulose sprayers; they remove their respirators whenever they think that they are not under the eye of authority; they do not drink their milk; they are frequently not punctilious about the efficiency of the suction fans which are supposed rapidly to remove the vapour from the atmosphere. In an ideal spraying plant each man works in a separate compartment with an adequate suction fan, so that he is not likely to be splashed by his fellow workmen; but even so, the vapour is diffused over the skin of the head, neck, and arms, and has the same possibilities of penetration as a fine dust. When it is remembered that in eight hours one man with a spray will handle as much paint as a man with a brush will handle in half a week, the necessity for adequate protection of the worker cannot be too strongly emphasized.

Conclusion

We can therefore conclude that so far as occupational dermatitis is concerned, the only prophylactic measures which are of practical importance are the restriction of the use of deleterious agents so far as is possible; the instruction of the employees so far as is possible in preventive measures; and the adequate ventilation systems in those factories where the atmosphere is dust- or vapour-laden. At present the prevention of occupational dermatitis by selection of employees is almost a council of perfection.

Before summarizing what has been said I would like to say that out of a vast range of subjects I have tried to choose those which may be of interest to general practitioners as well as to dermatologists; several very controversial issues have been opened in order to provoke a good discussion. You will remember that I began by suggesting that the science of preventive medicine was born in the sphere of diseases which have cutaneous manifestations; then we passed on to consider an inherited disease, psoriasis; and thereafter made some reference to the prejudicial effects caused by errors of diet. Then some very controversial work on the endogenous eczema of infants was discussed, and finally a few remarks were made concerning the prophylaxis of industrial dermatitis.

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CERVICAL GLAND TUBERCULOSIS: THE CASE AGAINST SURGERY

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Radical excision of tuberculous cervical glands is an operation performed less often to-day than thirty years ago. Surgeons in general seem disposed to favour conservative measures for certain types of the disease, reserving radical excision for localized glands in the upper deep cervical group, infected presumably by the nasopharyngeal route,⁸ where it is possible to remove also the tonsillar portal of entry. Extirpation of the disease entire is the usual aim, and some authorities^{3 13} hold this to be the only justification for operation.

The practical objections to this ideal are obvious to anyone who has performed or watched the performance of a deep dissection of tuberculous neck glands, which are usually much more extensive than is clinically apparent. It is often difficult to decide where the disease ends and which glands may safely be left untouched; naked-eye appearances are unfortunately not infallible evidence of freedom from tuberculosis. Even the concurrent removal of tonsils and adenoids, 46 per cent. of which will exhibit microscopic tubercles,¹⁹ takes no account of their lymphatic efferents; though actual tuberculosis of lymphatic vessels has never been demonstrated their fluid contents may hold living bacilli. It is therefore possible for even the most searching dissection to overlook some focus from which fresh disease may arise, and that this is common is suggested by the frequency of local recurrence after operation. Miller⁸ found such local recurrence in 23 cases out of 89; and Clute³ in 11 out of 43—that is, 26 per cent. in each series. Out of 83 patients operated on by Grey Turner¹⁴ the disease recurred locally in 15 and in other situations in 4 (23 per cent.).

Recurrence Rates

I believe that close and prolonged observation after operation may show a much higher rate of recurrence. Minor glandular enlargements, possibly subsiding within