

conscious experience of these harmonics. This being the case, the use of D.S.U.H. as a research tool in this field could open up the possibility of labelling the sensation of pitch as distinct from the total auditory experience, thereby facilitating research into the general mechanisms involved in hearing and the conscious distinction of different sorts of sounds.

The evidence of the conditioned-reflex experiments would seem to support the clinical and audiometric evidence that deafness to tones of specific frequency can be produced by D.S.U.H. However, it is recognized that the case is still, in some respects, unproved. Further work with conditioned reflexes, involving a variety of physiological responses other than heart rate, is now in progress.

Finally, it may be important that such selective deafness produced by D.S.U.H. appears to have been extended in all cases to include a loss of peripheral vibratory sense to the same frequency and in some cases to other frequencies. We are not, however, aware of evidence that any kind of deafness of psychopathological origins shows this association, but clinical investigation of this possibility could presumably settle the point.

Summary

The auditory thresholds of six deep-trance hypnotic subjects were measured in the waking state and again after deafness to tones of specific frequency had been suggested under hypnosis. This deafness was then further examined clinically and by means of experiments with positive conditioned reflexes, using heart rate as the conditioned response. In certain subjects this selective deafness sometimes included not only the test frequency but also half and occasionally twice this frequency, and on one occasion one-third of the frequency. Some evidence was found to support the thesis that these variations in responses were related to the semantics of the words used by the hypnotist when making his suggestions, although the subjects were not aware of any such distinctions in the waking state. There was also evidence of an associated loss of peripheral vibratory sense to the same frequency as the test tone, and in some cases to other frequencies.

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CONGENITAL ICHTHYOSIFORM ERYTHRODERMIA TREATED BY HYPNOSIS

REPORT OF TWO CASES

BY

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[WITH SPECIAL PLATE]

A novel and spectacularly successful approach to the treatment of congenital ichthyosiform erythrodermia (Brocq, 1902) was made when Mason (1952) treated a patient by direct suggestion under hypnosis. The clinical diagnosis had been confirmed by biopsy. Except for the skin of the chest, face, and neck, the whole body of the patient, a boy of 16, was covered by a thick, blackish horny layer. Transplants by plastic surgery of apparently normal skin from the chest soon became ichthyotic in their turn, and contractures resulted. However, five days after hypnotic suggestions of improvement had been given the horny layer started to soften and be shed, but only in that area to which the suggestions applied. It therefore seemed improbable that the resolution had occurred spontaneously. Subsequently the other affected areas were included in suggestions of cure, and showed a similar response. The improvement, assessed at between 95% and 50% in different parts, had been maintained four years after treatment had been completed (Mason, 1960). Mason concluded either that there is a hitherto unrecognized psychic factor in the aetiology of the disease or that a congenital organic condition had been affected by a psychological process, or that a combination of both these factors obtained.

Schneck (1954) used hypnosis in treating another form of fish-skin disease, a case of ichthyosis simplex in a 33-year-old man whose whole body was affected to a varying degree and who suffered the typical winter exacerbation. The patient was rather sceptical of hypnotherapy at first, and tended to underestimate the beneficial results which seemed attributable to it. These results were variable and irregular, but the patient largely escaped the next cold-weather deterioration. When his attitude of "healthy scepticism" was altered to one of strong desire to prove responsive to treatment there was an over-all improvement assessed at between 40% and 45%. The patient himself related the efficacy of the treatments to the depth of the trance state achieved on each occasion. Schneck commented on the significance of this attitude, and remarked on the need for biochemical and physiological investigations with the experimental use of hypnosis in ichthyosis and other skin disorders.

Two further cases of congenital ichthyosiform erythrodermia treated by hypnosis are described here. The patients are sisters; there is no family history of this or any other ichthyotic manifestation or ectodermal defect. Twin brothers delivered at home in May, 1960, appear so far to be normal, and there are no other siblings.

Case 1

The patient, a female, was born at full term by spontaneous delivery after a normal pregnancy on March 8, 1952. At birth the skin of the trunk, palms, and soles was seen to have a dusky-red hue, but the infant was otherwise normal in appearance. No peculiarity of the vernix caseosa

was noted. In a few weeks the skin started to become rough and flaky. The condition gradually and progressively worsened, so that by the end of the seventh year the whole integument was thickened and scaly, especially in the antecubital fossae, the popliteal fossae, and the anterior surface of the neck. This predilection for flexor aspects is characteristic of congenital ichthyosiform erythrodermia and serves to differentiate it from other forms of ichthyosis. The skin of the palmar aspects of the fingers and hands, and that of the plantar surfaces of the feet and toes, was covered by rigid horny plates with cracks and fissures overlying every joint; these were especially painful at the metacarpophalangeal joints. The nail growth was normal. The skin of the trunk and front of the neck was thickened and greyish and formed small rectangular scales very like those of lizard skin; on the legs the scales were thinner and much larger. Sometimes neighbouring scales separated and raw gaps forming a reticulate pattern appeared, these being particularly painful and distressing. The skin of the face showed a branny desquamation. The mucous membranes were normal and the teeth properly developed though carious. Hair growth was also normal, but the scalp was the seat of thick seborrhoeic crusting. One unusual, if not unique, feature was that the skin became thicker in summer, and would desquamate and remain thinner during winter; this is in direct contrast to the usual course of events consistently described.

Case 2

This patient, born normally on July 4, 1954, presented features similar to those of her sister, except that the erythrodermia was much less marked and there was no hyperkeratosis of the palms and soles. Ichthyotic changes were otherwise identical in form and distribution, but less severe throughout, except on the anterior surface of the neck. Both children were of average intelligence, seemed content and well adjusted in spite of their disfigurement, and were co-operative.

Previous treatment had included applications of ung. adip. lan. hydros. containing 10% sodium chloride (Ljungstrom, 1941), and occasional intensive courses of vitamin A by mouth in a dosage of 150,000 units daily (Rapaport, Herman, and Lehman, 1942). The former kept the skin reasonably supple, and the latter would bring about a phase of desquamation and a noticeable temporary improvement, but the condition would relapse after a fortnight or so, and for a short while afterwards the skin would be rather worse.

Response to Treatment

Treatment by direct suggestion under hypnosis was begun on February 27, 1960, when the appearances in Case 1 were as shown in Special Plate, Fig. 1. This patient was induced readily by the eye-fixation technique, and the trance state deepened with arm levitation. Skin analgesia of the right arm was then produced and demonstrated in order to heighten suggestibility, and normal sensation returned two minutes after "waking" as a result of post-hypnotic suggestion. This indicated that the patient had at the first session entered a fairly deep trance state. Direct suggestion was made under hypnosis that the affected skin of the right forearm, hand, and fingers would soon start to grow soft and smooth and the thick skin would flake off. This suggestion was repeated at weekly intervals for eight weeks, and intentionally restricted to that area for purposes of comparison with the left. Thereafter at fortnightly intervals for the next two months, and then monthly for a further two months, the suggestions were extended to include the whole integument.

Fourteen days after the treatment was started the patient claimed that the fingers of both hands equally felt softer and that "she could feel things more easily"; there was, however, no objective improvement at this stage. After 28 days the skin of all finger-tips was noticeably thinner and less scaly and the palms of both hands softer; the horny layer was thinner and more flexible. These changes

were slightly but definitely more marked on the right limb—that is, on the side to which the therapeutic suggestions exclusively applied. By the end of the sixth week the rate of improvement had increased, the skin of the terminal phalanx of the right thumb being entirely normal in texture, and that of all the other terminal phalanges of the right hand practically so, though still erythematous. The improvement on the left side was slightly less striking. There were several areas of clearing on both palms. At the end of the eighth week the improvement had continued and there were penny-sized areas of normal skin in the centre of each palm, as well as evidence of mitigation elsewhere. Subsequently the whole skin was involved in suggestions of improvement (not of cure), and within a fortnight flakes were being shed from the abdomen. Her mother remarked that she was now much easier to keep clean. By April 29, 1960, the exceptional weather was, according to previous experience, warm enough to have brought about a considerable worsening of the skin condition instead of the improvement now noted, and this continued in the unusually warm early summer that followed. In July the general condition of the skin had not been better since infancy, but branny flakes persisted on the trunk and limbs and to a less extent on the face (Special Plate, Fig. 2).

Case 2 never entered a deep trance state, and did not enter one of medium depth until the fourth session. No improvement resulted until after this session, when it had been suggested that the skin of the face and front of the neck would grow softer and smoother. At this stage the skin of the forehead did in fact start to clear from the centre. A week later this process had extended on the forehead and also on the chin and round the mouth. The skin on the front of the neck was also softer. By the sixth week the clearing of the face was striking, and by the tenth week the skin of the face and legs was practically normal, though suggestions had not included the legs in this case. The skin of the trunk was also slightly better, but no further improvement could be achieved, though this patient too escaped her usual hot-weather deterioration.

Attempts at the assessment of skin changes can never be accurate and may be misleading. Photographic comparisons may also be deceptive unless the pictures are taken under identical conditions of lighting and other contrast techniques. With these reservations, the improvement in these two cases is tabulated as follows:

Table Showing Clinical Assessment of Improvement

	Case 1		Case 2	
	Reduction in Skin Thickness	Reduction in Area Affected	Reduction in Skin Thickness	Reduction in Area Affected
Face	50%	25%	75%	90%
Neck	75%	0	40%	0
Arms	50%	0	20%	0
Palms and fingers ..	50%	50%	—	—
Trunk	50%	0	25%	0
Legs	75%	75%	20%	0
Soles and toes ..	50%	50%	—	—

Discussion

These results show features in common with those of both previously reported cases. There is apparently some correspondence between specific suggestions and the changes consequent upon them. In Mason's case this correspondence was very striking, and seems to indicate the influence of a psychological process acting directly on local tissue metabolism. The condition so affected is undoubtedly congenital and hereditary (Cockayne, 1933), and it is difficult to see by what pathways such an influence could be mediated. On the other hand, the psychotherapeutic approach of Schneck, not aimed primarily at symptom-removal, can be more easily understood to exert a generalized beneficial effect, rather than a local and specific effect, on any organic

condition associated with psychological factors. There is, however, no evidence that there is any constant primary psychopathic or psychoneurotic component in the ichthyoses, except in the case of some of the variants of Rud's syndrome, where congenital ichthyosis is associated with spastic diplegia and mental deficiency (Richards, 1960).

In the two cases described above it seemed unlikely that there was a psychological factor in the aetiology, and both showed some definite conformity to the suggestions, though this conformity was not exact, for the response included improvement extending outside the designated areas, and a relative failure in other areas which were intended to respond. Finally, though there was a mild improvement in undesignated areas, it was quite overshadowed by the changes in those intended to benefit.

As Schneck's patient commented, and as shown by the subjective response of Case 1 and the objective response of Case 2, there seems to be some relation between depth of trance state and efficacy of suggestion. This could be explained if it were generally true that suggestibility is enhanced in proportion to the depth of the trance state in hypnosis. This, however, is certainly not true in the "charming away" of warts, for here if the suggestion is assertive enough it is likely to be effective, whether hypnosis is used or not.

If, therefore, the credulity or suggestibility of the subject does in fact exert an influence on the outcome, it would be logical to use all possible means to increase this suggestibility. Nevertheless, in most cases emphatic and optimistic assertions of cure by hypnosis remain morally indefensible so long as the outcome is in fact uncertain, while to give the subject a more sanguine prognosis is to spike one's own guns by undermining the authority behind one's suggestions.

While there is at present no clear solution to this dilemma, there can be no doubt that hypnosis has a rightful and potentially important place as an ethical therapeutic measure in this and in many other conditions.

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Hong Kong 1960, the Colony's annual report, reviews the fascinating subject of the water supplies of a community with a total land area of 398 square miles, no natural lakes or large rivers, a summer rainfall of around 85 inches, and a population which has risen from 90,000 when the first reservoir was planned in 1895 to a figure now thought to be in the region of 3,200,000. Reservoir after reservoir has been built, and yet demand is continually overtaking supply. The latest schemes to be embarked on will cost over \$1,225m. in the next ten years, and will practically exhaust conventional sources of supply. If the demand still grows, the report says that it can only be hoped that the use of nuclear power to distil sea-water will by that time have become an economic proposition. However, in spite of the restricted water supply, the overcrowding, and the rapidly increasing population, the Colony's general health has remained remarkably good. (H.M.S.O., 12s. 6d.)

TREATMENT OF PLANTAR WARTS IN CHILDREN

BY

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Plantar warts are often thought to be trivial lesions, but they are a very real cause of disability in childhood. There appears to have been a rapid rise in the incidence of such lesions, Horwitz and Marker (1960) noting a fivefold increase in the past 25 years. Treatment is time-consuming and often disappointing, and, as the spontaneous cure rate may be as high as 27% in three months, assessment of results is difficult (Horwitz and Marker, 1960).

Over the years many treatments have been tried. Curettage is probably the oldest and remains popular. It can give good results in the hands of experienced dermatologists, but a painful scar may result (Duthie and McCallum, 1951). Apart from this, the injection of a local anaesthetic into the sole is almost always painful and often there is considerable discomfort for several days after the operation, especially if the silver nitrate stick is used as a haemostatic. Radiotherapy was used to a large extent in the armed Forces during the second world war, but has fallen into complete disrepute owing to the reports of disastrous after-effects (Shaw, 1948; McLaughlin, 1948). Duthie and McCallum (1951) used occlusive "elastoplast" dressings combined with podophyllin and cured 60% of their patients in two months. This method is time-consuming to the medical attendant and probably entails frequent visits to hospital or surgery; also, the cure rate seems disappointingly low. Morgan (1952) used liquid nitrogen in the treatment of 14 patients, of whom 10 were cured. In our experience this method is associated with considerable pain and a high recurrence rate.

In 1943 Thomson, using 3% formalin solution for hyperhidrosis, made the accidental discovery that plantar warts responded to such treatment. He reported a 75% cure rate in a small group of patients, though Warin (1958), using a slightly different technique, cured only one-third to one-half of his patients. The results with formalin are entirely dependent on the co-operation of the patient and the enthusiasm of the doctor in encouraging persistence with treatment. With these facts in view it was decided to undertake both a retrospective and a prospective survey of the results of treatment with formalin in this department.

Material

Retrospective Survey.—Between January, 1957, and January, 1959, 465 children under 17 years of age had been treated for plantar warts. All were contacted by letter and were asked to attend the department for personal review between July and September, 1960 (an average follow-up period of 2.7 years, with a minimum follow-up of 1.5 years): 391 (84.8%) attended as requested, a further 55 (11.1%) replied by letter giving sufficient information for the study, and only 19 (4.1%) remained untraced.

Prospective Survey.—A series of 200 consecutive patients (148 girls, 52 boys) with plantar warts who were

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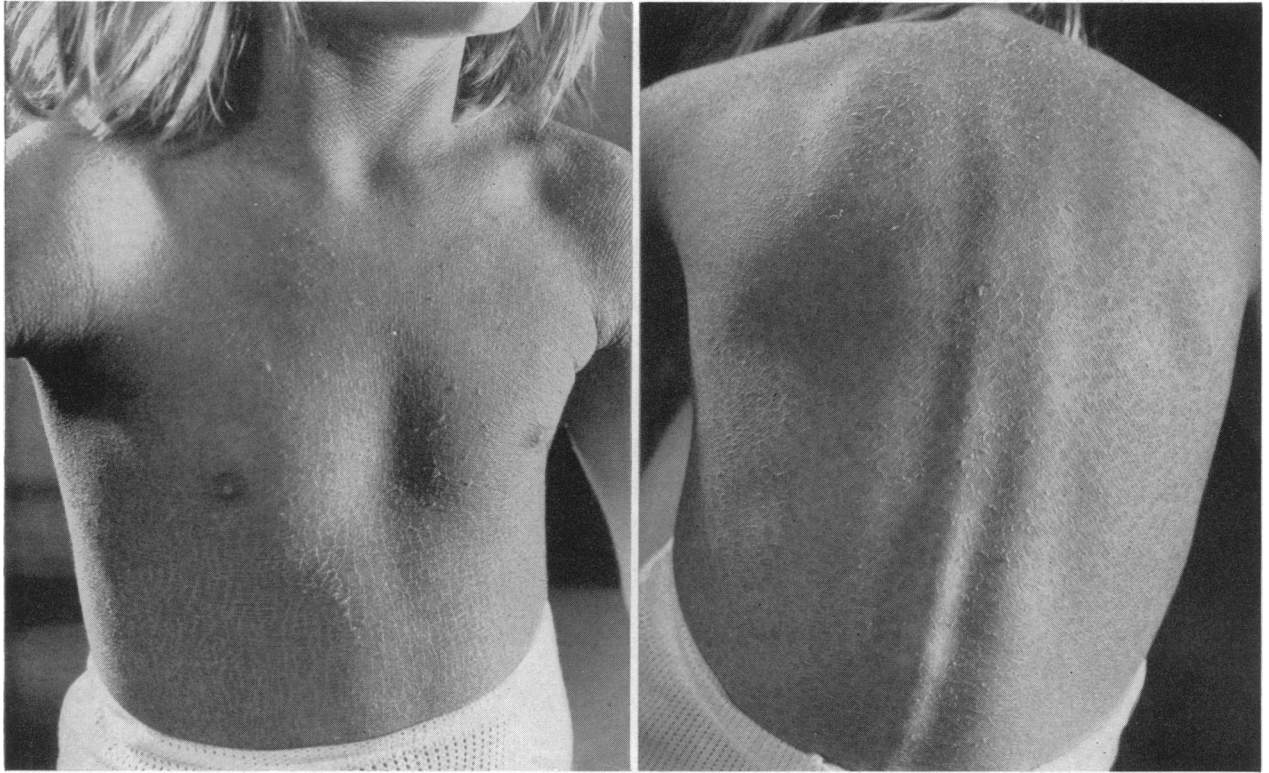


FIG. 1.—Case 1 immediately before start of treatment.

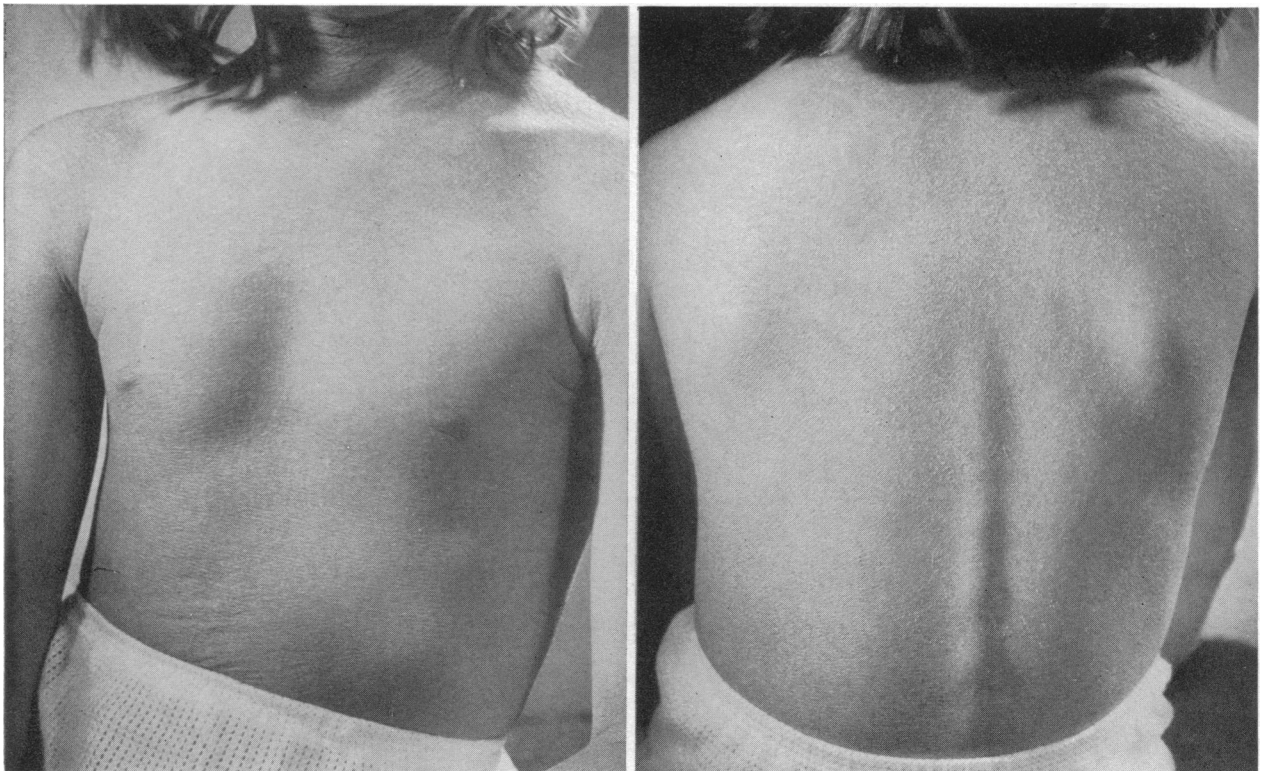


FIG. 2.—Case 1 four months after start of treatment.