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Keratosis follicularis

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KERATOSIS FOLLICULARIS

BY

ALFRED P. STAPPENBECK

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INDEX

INTRODUCTION	PAGE I
CLINICAL HISTORY	PAGE 2-17
CLINICAL PATHOLOGY	PAGE 18-19
PATHOLOGY	PAGE 20-21
HEREDITY FACTOR	PAGE 22
TREATMENT	PAGE 23
FOREWARD TO CHARTS	PAGE 24
CHART I	PAGE 25
CHART II	PAGE 26
CHART III	PAGE 27
ABSTRACT OF CHARTS	PAGE 28-32
TREATMENT RESULTS AND ADDED INFORMATION	PAGE 33-36
CONCLUSION	PAGE 37
BIBLIOGROPHY	PAGE 38-41

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INTRODUCTION

Keratosis follicularis has many synonyms such as Psorospermiosis, Darier's disease, Keratosis vegetans, Psorospermose vegetante. Lately in 1935 Dr. Kendall Frost made an effort to have all the terms discarded and the disease put under the heading of Dyskeratosis follicularis until the skin manifestation is more fully understood.⁸⁹

The disease in its early stage is manifested by the presence of papules which may make their appearance at any age, in either sex, over any area and has a familial tendency. These papules have a tendency to extend gradually or by acute exacerbations to the neighboring skin areas. The papules later become crusted, and may later coalesce forming in some areas papillomatous, vegetation tumor-like growths. The areas of predilection of the lesions are on the hairy areas of the body, such as scalp, face, neck, chest, back, inguinal regions, and extensors of the arms.

This thesis is written in part as an aid in satisfying my own curiosity as this skin disorder is present upon myself. A chart is made as a means of correlating the cases presented up to the present time, in an effort to come to fairly definite conclusions.

ETIOLOGICAL, PATHOLOGICAL
AND
CLINICAL HISTORY

This skin manifestation was first given its name in 1886 by Morrow, who made biopsys and described the lesions on a single patient. Up to this time due to other skin diseases of simular nature there was no set diagnosis made uniformly, due to the fact no microscopic sections had been made to differentiate between them.

Morrow's patient was a sailor who first noticed the disease when an adult. The lesions were first noticed on the back of the hands. Then these lesions slowly extended all over the body being much more severe on the posterior surface of arms and neck, on the thighs and on the legs. The face, palms, and soles were free.

The patient said that a voyage would aggravate the severity of lesions, and while on land these would subside a great deal.

Upon physical examination Dr. Morrow described the surface of the skin as that of feeling over nutmeg grater. Upon superfical examination the ducts of the sebaceous glands projected upwards being occupied by a more or less prominent spinous elongation, which are of a grayish, round, comedo-like substance.

These comedos when expressed are of a dirty grayish color, hard horny, and dry. When thrown upon a paper

there is a sound similar to that of the "rattle of dry peas." No matter how large or how long present these comedos were in the follicles there were no signs of infection or irritation.

The cause of this was believed to be an involvement of the sebaceous glands in which there was perhaps an atony or deficiency in their excretory powers. Thus the retention over a long period of time, the desiccation and solidification along with a premature exfoliation of epithelium in the sebaceous gland before their fatty transformation took place. These comedo like structures would be slowly pushed to the surface, and would assume the shape of the ducts.

He said Ichthyosis sebacea and Keratosis follicularis were different. He differentiated the former to be due to an over secretion of the sebaceous glands with a desiccation after it left its over active glands with the hard cornification and incrustation. While the latter was due to under activity of the sebaceous glands. However, it is now known that Ichthyosis sebacea, and Keratosis follicularis are the same.

He said Ichthyosis follicularis is an objectionable term in that Ichthyosis is a congenital malformation in which there is "an altered and anomalous devious development of the skin," which is present soon after birth and has a generalized distribution over the skin. While this

manifestation is not present at birth, is not over the skin surface, and is not in the skin itself but involves the hair follicle and its annex sebaceous gland.

On microscopic section the outer layer of the sebaceous gland was flattened against its basement membrane, and the inner portion of the comedo showed flattening and no fatty transformation. Also the entire sebaceous gland was thought to be involved.

This above description of microscopic and macroscopic findings does not entirely agree with the later findings of Keratosis follicularis; but never-the-less Morrow is credited with naming the disease as "Keratosis follicularis."²

White and Darier in 1889 working independantly both described cases which are identical. White calling his case Keratosis Follicularis and Darier his cases as Psorospermose Folliculaire Vegetante. White published his work in June and Darier his in July, unknown to each other.

White described his case in which there were lesions over the entire body with the exception of the palms and the soles with portions of the flexor portions of the arm being free. He analyzed these lesions as follows:

- 1." Minute papules, the size of small pin heads, smooth, firm, and not different

in color from surrounding skin."

2. "Papules some what larger than above lesions but slightly hyperaemic in appearance."

3. "Still larger papules of flattened hemispherical shape, with smooth or polished, dense coverings of nail like consistency, and varying in color from a dull red to a purplish dusky red, brown and blackish brown."

All these above lesions are distinctly separate from one another with normal skin between them.

4. "Extensive elevated areas formed by confluence of the above lesions, presenting uneven surfaces. covered by a thick yellowish or brownish, flattened, horny concretions."

5. "Elongated, horny masses from 1/2 to 1/3 inch in diameter and from 1/8 to 1/2 inch in height with an irregular outline with blunt, truncated apices, yellowish in color, of dense consistency and very compact. They may be removed with much difficulty which exposes a base of the corresponding area, which is elevated

- over that of the general skin surface,
and having a hyperaemic and moist
appearance.

His description of the distribution of these lesions is very good. "The small discrete papules are distributed over the flanks and lateral thoracic regions, the flexor aspects of the arms, and some parts of the legs, The larger forms and confluence of the same occupy extensive tracts upon the extensor aspects of the arms, anterior and posterior aspects of the trunk, and nearly all the entire lower extremities. On the lower legs they form thick plates, completely encircling the legs." The prominent horny prolongations are seated upon the median spaces of the trunk, front and back especially over the sternum and the pubes.

6. "Smooth flattened, blackish, elevated plates forming a continuous covering upon the dorsum of the feet."

7. "Enormously dilated follicular openings distended apparently by firm slightly projecting concretions, forming hemispherical elevations. These occupy nearly the whole surface of the upper part of the face."

8. "Small sharply pointed conical

horns, curved at the tip protruding an eighth of an inch from a few of the distended follicles and found below the eyes."

9. "A few large circular elevations with blind central depressions, nearly a half inch in diameter seated upon the temples."

10. "Large papilloma-like excrescence almost fungoid in appearance nearly filling the space behind the ears, and separated from each other by deep fissures."

In this case the hair growth was normal, but there were scattered medium sized firm papules on the scalp. There was little deviation from the normal skin texture on the soles, palms and genitals. The nails are coarse, slightly thickened, and on the free edge some jaggedness. There was considerable pruritus in which the scratching tore off several of the horny elevations, which were slowly reproduced. There was a severe odor which is characteristically that of decomposing epithelium.

This man was a soldier, and when at age of 22 first noticed "a rash" under his knapsack after a march. He said this rash had the appearance of the small lesions he had when abserved. Then 6 years after the initial rash the lesions extended to the legs and then slowly spread over the whole body. He had always been in good health.

8

The manifestation of the disease is a keratosis or primarily a hypertrophy or modified cornification around the follicular openings.

Dr. Bowen made microscopic examinations of biopsys taken from the patient by Dr. J. C. White. He found there was a keratosis of the epithelial lining at the mouth of the follicles. Thus due to dilatation and pressure the sebaceous glands are pushed aside, but are found to be normal. Thus a gradual corneous production pushes up the horny plug above the skin surface. Thus with a review of the two cases it can be seen that Dr. Morrows case showed a simular condition existing as to the horny plugs in each case, but Dr. Morrows case did not show any of the other typical manifestations that Dr. J. C. Whites patient did. Dr. Morrows case upon biopsy examination showed an involvment of the sebaceous gland, while later works find that the sebaceous glands are not involved. However recent authors grant Dr. Morrow with describing, making a diagnosis, and first giving this skin manifestation its name, of Keratosis follicularis.³

In 1889 in the July number of the "Annales De Dermatologie." Dr. J. Darier of the St. Louis Hospital in Paris made an anatome-pathological report of a skin affection which he called "Psorospermose Folliculaire Vegetante," but the description and symptoms agree with

the Keratois follicularis" as described and diagnosed and reported by J. C. White in June of the same year. These two men worked separately and unbeknown of the others work until thier separate articles were published.

Dr. Dariers observations were taken from two cases. In these the lesions were generally scattered over the body but more severe on the scalp, face, pre-sternum, flanks but more severe in the ingiunal region. "In its first stage the elementary lesion is a small papule surrmounted by a brownish or grayish crust which is elevated, thin, hard, and dry to the touch, and firmly adherent. When you have succeeded in removing it you see that it is veritable little horn incased in a funnel shaped depression by a conical extremity of dirty-white color semi-soft consistence, and has a fatty feeling." At the point of confluence of the lesions there is found upon the skin a brownish or earthly colored layer, more or less fatty to the touch, and there are a series of closely-packed irregular elevations, which give the hand a sensation as of passing over a file. Hypertrophic, reddish elevations the size of a lentil, or pea, or even larger having a central depressions, are at times found from which can be pressed sebaceous matter, either pure or mixed with pus."

The various types of lesions may form large confluent masses which are more often found in the anal region, hypogastric region, and the folds of the groin. These lesions are more on the order of tumors. These so called tumors are, as shown by histiological studies, to be advanced stages of the early papules, surmounted by a peculiar crust.

The origin of these lesions is principally at the neck of the pilo-sebaceous follicles. There is a structural difference in the follicular epithelium above and below the openings of the sebaceous gland. The portion above is similar to the surface epithelium, or just an invagination. The neck is filled and dilated with the plug of horny material which projects from the surface. The hair is not involved, but either goes through or around the mass.

It was his ^{own} opinion that these so called horny plugs differed in this respect from the cornified productions of other affections. "A great number of these cells in the lower portion of the plugs have the aspect of quite round bodies surrounded by a refractive membrane of double contour, plainly marked, which gives them somewhat the appearance of cartilage cells enclosed in their capsules. This membrane contains a granular protoplasm, which often fills it incompletely and in

10.
the middle of which is generally seen a nucleus well defined and furnished with a nucleoles." With the above description and the absence of union of these bodies, Dr. Darier maintains these are not epidermal cells. These are considered by Dr. Darier to be parasites or organisms of the class sporozaires or psorosperms. Thus, these horny plugs are composed largely of psorosperms, epithelium bacteria, and altered pus. These psorosperms are found almost entirely in the epithelium of the vertebrates, and live within the epithelium cells. These organisms have no movement, live within the cells, "solitary encystment not preceded by conjugation, and a relatively small number of spores which form in the cyst."

Similar bodies were also found by Bollinger in Pagets disease. Also, other men found similar bodies in epithelionas. Therefore some thought at this time these psorosperm or parasites were also the cause of these diseases.

Darier, thus, differentiated this skin disorder from Keratosis follicularis, that Dr. Morrow described, in that there were none of these bodies so described.

His final conclusions are:

1. "There exists in man a group of cutaneous diseases which merit the name of psorospermoses being due to the presence

in the epidermis of parasites of the order of sporezoaires, group psorospermies or coccidies."

2. "In one of these diseases the of a particular nature invade the orifices of the follicles of the skin; they present themselves under the form of round bodies, generally encysted and inclosed within epithelial cells, or as refractive grains. This accumulation constitutes a plug which projects from the orifice of the follicle."

3. "The presence of these parasites may serve to establish the diagnosis of this disease, for they are not meet in any other affection which is clinical analogous."

4. "The neck of the follicle invaded becomes secondarily the seat of papillomatous vegetations, which take on an extensive development and constitute veritable tumors."

5. "This disease which can be called Follicular Vegetative Psoropermosis, should from an aetiological standpoint

be closely allied to Paget's disease and very probably to Molluscum Contagiosum." 4

Immediately many men took up the theory of Darier, that these parasites were the etiological factor in the cause and production of the plugs in this disease. However, there were a few men who did not believe this to be true, and held to the hyperkeratosis of the epithelium cells in the necks of the follicles, as found by White and Bowen. In fact for two or three years after Darier's work the greatest proportion of the cases were described as "Psorospermiosis Follicularis" and not as "Keratosis Follicularis."

Shortly after Darier put forth his contentions on the etiological factor of this dermatological manifestation, Dr. J. C. White had a second patient, a young girl who was the daughter of his first patient. Both cases were similar clinically in all respects to those cases of Dr. Darier. Due to Dr. White's original paper not reporting the findings of these so called psorosperm in his first case; Dr. Bowen made biopsies of each patient's skin. He used the same technic as that of Dr. Darier and found in both the so called psorosperm or inclusion bodies. Thus all cases falling under the same category.

Dr. J. C. White and Dr. Bowen then raised the question as to these bodies being the etiological factor in the

3
4
cause of this disease. These so called organisms could not be cultured, or could the disease be transmitted by auto-inneculation.

Dr. Bowen also found cells strangely resembling these bodies in question in other skin diseases. Grave suspicion was, thus, cast upon these questionable bodies being the etiological factor in the cause of a single dermatosis.⁵ 6 ON 148.

In Nov. of 1892 Dr. Boeck maintained that, the presence of parasitic psorosperm being the etiological factor in the cause of Darier's disease was yet to be proven. In his opinion these large round bodies, in question, were nothing else but epidermal cells which had undergone irregular cornification. He maintained the disease had, also, a connection with a seborrheic process and there was a tendency for hyper-keratosis.⁷

In Oct. of 1892 Dr Elliott made an abstract of Dr. Neissner's paper. He claimed that due to want of proof that these so called bodies were parasites, the theory was slowly dying for want of support. That, due to the fact many men were seeing and claiming these were coccidia bodies just because they looked like them, and not being able to culture them, the evidence swayed to the fact these bodies were nothing but pathologically changed cells. Thus, the theory of Psorospermiosis would

Addition to Page 14

In Nov. of 1890 Dr. Piffard made studies of these questionable bodies by means of polarized light and determined they were nothing but rete cells undergoing corneous degeneration. He was also of the belief that the simular bodies found in Pagents Disease and Cancer were nothing but degenerated cells.⁶

in the future only be a matter of historical interest. ⁸

Thus with the works of Dr. White, Dr. Bowen, Dr. Boeck and Dr. Elliott as well as many other men, there was the swinging away of the theory of Dr. Darier, as to the etiological factor being the parasitic psorospermes in this dermatosis.

In 1896 Dr. Darier gave a revised view-point on the pathological anatomy of the disease. This view point was a wide difference from his early presentation in 1889. In fact Dr. Darier refuted his theory of the parasitic psorospermes as being the etiological factor of the disease.

He now felt the lesions had a tendency to be around the pito-sebaceous follicles as well as around the sweat follicles, even lesions in the epidermis alone. There may be these morbid areas surrounding healthy follicles. The epidermis not connected with a hair follicle showed that there was an infiltration at the stratum corneum (horny layer) of "keratoid masses." These have not the same structural manifestations as do the cells of the stratum corneum, but are granules. This was of great diagnostic importance.

At the border of the lesions, there could be seen fissures in the stratum mucosum (mucous layer). These fissures or cavities were caused by irritation due to

the pressure of the keratoid bodies.

The stratum granulosa was also interrupted and the cells did not contain the normal eleiden which was now absent or was gathered in little groups in the upper portion of the stratum mucosum. Thus in these cells there was a keratonization without the presence of eleiden.

The granules of the keratoid masses were round or polyhedral cells, with nuclei. Under these lesions and under the keratoid masses there were seen "Corpi-ronds" which the foundation in the lacunae. These appeared to be intra-cellular. It was these characteristic bodies which were of value in the micro-scopic diagnosis of the disease.

The early process was granular disintegration of certain of the stratum mucosa layer cells and the "Corpi-ronds" form the foundation beneath in the lacunae, as well as on the lateral sides of these disintegrating mucous cells.

These "Corpi-ronds" appeared to be intra-cellular but appeared to be only altered mucous cells which have undergone keratonization abnormally in its mechanism, topography and even in its ultimate product, which was not eleiden.

These "Corpi-ronds" were thus no longer considered

by him to be psorospermia or coccidia bodies but altered stratum mucosum cells.

Thus, Dr. Darier changed his opinion on the pathology as well as his attitude on the etiological cause of the disease.

Great credit was given to Dr. Darier in the microscopical pathological findings of this dermatosis, in that subsequent ^pbiosys were required to exhibit these queer refractive bodies in order to establish an absolute diagnosis of Keratosis follicularis, if there was a questionable clinical picture.

Due to his works the disease was called Darier's Disease, as well as Keratosis follicularis. ⁹

CLINICAL PATHOLOGY

The present day concept is that there is essentially a keratosis of the mouth of the follicles, but there, also, may be an involvement of the skin surrounding a normal follicle, also skin may be involved which is in no way connected with any follicles. Mucous membranes, palms, soles, and nail-beds may also be involved.

The lesions on the scalp are much like those of a seborrhea of a crusting nature, but there is no tendency to the loss of hair. The lesions on the face, neck, back of ears, back and chest may be small papules from which fatty, horny, plugs of hard consistency may be pressed out leaving central pits. The advanced stage will be a crusting over of these papules, the crusts being of a grayish, yellow, oily, appearance and when scrapped off present red erythematous bases upon which the crusts slowly reproduce themselves. In some areas as in the inguinal region, groin, legs, and on the scalp there may be a coalescence with the formation of papillomatous, vegetating, tumor-like growths. The advanced stages have the characteristic odor of disquamating epithelium. /

In some cases there is an involvement of the mucous membrane in which there is whitish papules upon the hard and soft palate.

In a few cases there is a symmetrical hyperkeratosis of the palms and soles.

In a few cases the lesions of the nail-beds are manifested by the appearance of the nails which are dry, brittle, striated and have jagged edges.

Subjective symptoms may vary from no discomfort to much pain and pruritus of which the latter is much more severe in the summer.

Many patients noticed that summer aggravates the skin lesions and have a tendency to extend during this time. Also, winter seems to give some recession of the areas involved and relief from subjective symptoms.

PATHOLOGY

The appearance of biopsy sections is described very nicely by Dr. Darier in 1896, which is written under the heading of clinical history and pathology on page 15. It is with his work that subsequent biopsys were more easily diagnosed as Keratosis follicularis.

The present belief is that this disease is a dyskeratosis due to a disturbance in the keratinization of the excessively poliferating prickle-cells. ⁸⁹

Dr. Hamdi made a study of the lacunae or hiatus between the basal cells and the Malpighian layer, and determined the changes began with an abnormal hypertrophy of the basal cells. These new fragil cells are thus torn from their parent basal cells, which are normally adherent to the prickle-cells above. There is a change in cell differentiation with the formation of elongated, round and oval cells which are very rich in protoplasm, and are slightly swollen. These cells are analagen o of prickle-cells. Some of these cells cease development and sharp margins develop around them these are known as the grain cells or "gains". Some of these "grains" develop refractive bands between the protoplasm, and the nucleus, and are known as the "corps-ronds". These two types of cells are of diagnostic significance in in biopsy sections. ⁸⁹

Brunauer showed there may be an involvement of the mucous membranes as well as characteristic lesions elsewhere. He put forth his idea, these "grains" and "corps-ronds" are cells which have undergone hyaline degeneration, and the "lacunae" are the expression of abnormal keratinization in the second and third layers of the rete. The bud like projections into the corium are due to the poliferation of the basal cells. 29

HEREDITY FACTOR

This skin disorder seems to have a definite familial tendency in which several members in one family may be involved. There are several instances in which the family history is negative.

Dr. Sweitzer in 1924 reported a case in which the Great-Great-Grand-Mother, Great-Grand-Father, Grand-Father, the patient and her neice were all afflicted. Thus present in 5 generations.⁵⁰

Several other instances of the familial tendency can be seen in the charts.

An abstract of the charts will give more on the family-history.

TREATMENT

The present accepted treatment is the use of the x-ray in its various forms.

Mr. Scheer maintains the early lesions respond readily whereas the late stages are very resistant and almost impossible to give lasting relief.

Although hope is held out to the curing of some cases not far advanced, no hope is in store for those cases in which the disease is wide-spread, as it will gradually extend no matter what is done.

Dr. Fred Wise had 2 cases which did not respond well to x-ray, but showed improvement with the use of the Infra-Roentgen Ray.

Dr. Andrews had one patient which failed to show improvement with large amounts of x-ray but the Infra-Roentgen-Ray gave results of much value.

FOREWARD TO CHARTS

These charts I believe are of definite value in arriving at a more thorough understanding of the picture of the disease as a whole and can be readily abstracted in any particular phase from 1886 up to the present time 1938.

Due to the fact that case historys written one after another are of no value to arrive at definite conclusions, these cases put in the chart form will be of some value.

I have abstracted 117 cases written in the American Literature from 1886 to 1938. I believe this takes almost all the cases reported in the United States as well as a few cases abstracted from the European literature.

CHART I

REPORTED BY		AGE		REGION WHERE		FAMILY HISTORY		BIOPSY REPORT		PRESENT EXTENT									
CASE NO.	YEAR	DOCTOR	SEX	AGE	NOTICED	FIRST NOTICED				SCALP	FACE	NECK	ARMS	BACK OF HANDS	PALMS	NAILS	CHEST	BACK	AXILLA
1	1886	DR. MORROW	MALE	21	16	BACK OF HANDS	NO REPORT	?		SEVERE	FREE	SOME	SEVERE	SEVERE	FREE	NO REPORT	SEVERE	SEVERE	MODERATE
2	1889	WHITE	MALE	49	22	SHOULDERS	ONE DAUGHTER (BELOW CASE)	1890 CONFIRMED		SOME	SEVERE	SOME	FLEXORS SOME	SOME	FREE	SEVERE	SEVERE	MODERATE	MODERATE
3	1890	WHITE	FEMALE	21	5-6	SIDES OF FOREHEAD	FATHER (ABOVE CASE)	CONFIRMED		SOME	SEVERE	SOME	WRISTS SOME EXTENSORS	SOME	NO REPORT	NO REPORT	SOME	NO REPORT	NO REPORT
4	1891	LUSTGARTEN	MALE	49	26	BACK OF HANDS	NEGATIVE	CONFIRMED		SOME	SOME	NO REPORT	SOME	SOME	FREE	YES	SEVERE	SEVERE	NO REPORT
5	1896	BOWEN	FEMALE	29	16	ON FACE	NEGATIVE	CONFIRMED		SEVERE	SEVERE	SEVERE	SLIGHT	FREE	FREE	YES	SEVERE	SEVERE	NO REPORT
6	1898	ELLIOT	FEMALE	50	NO REBAT	NO REPORT	ONE SON + ONE DAUGHTER	CONFIRMED		SOME	NO REPORT	NO REPORT	SOME	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT
7	1905	H. CURL	MALE	28	27	ON SIDES OF NOSE	NEGATIVE	NO REPORT		NO REPORT	SEVERE	SLIGHT	NO REPORT	SLIGHT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT
8	1906	HARTZELL	MALE	35	29	LOWER RT. CHEST	NO REPORT	CONFIRMED		FREE	FREE	FREE	FREE	FREE	FREE	FREE	LOWER CHEST RT. SIDE ONLY	FREE	FREE
9	1906	E. STOUT	MALE	35	15	NO REPORT	NO REPORT	NO REPORT		NO REPORT	NO REPORT	MARKED	NO REPORT	MARKED	NO REPORT	NO REPORT	MARKED	MARKED	NO REPORT
10	1908	G. WENDE	MALE	37	17	THICKENING OF PALMS + SOLES	NEGATIVE	CONFIRMED		NO REPORT	NO REPORT	SLIGHT	SOME	SOME	MODERATE	NO REPORT	MODERATE	MODERATE	NO REPORT
11	1908	MACLEOD + COLLINS	MALE	19	1	NO REPORT	2 BROTHERS AS BELOW	NO REPORT		MARKED	MARKED	MARKED	EXTENSORS MARKED	NO REPORT	NO REPORT	NO REPORT	SOME	SOME	SLIGHT
12	1908	"	MALE	13	1	NO REPORT	2 BROTHERS 1 ABOVE + 1 BELOW	NO REPORT		MARKED	MARKED	MARKED	MARKED	NO REPORT	NO REPORT	NO REPORT	SOME	SOME	SLIGHT
13	1908	"	MALE	10	2	NO REPORT	2 BROTHERS AS ABOVE	NO REPORT		MARKED	MARKED	MARKED	MARKED	NO REPORT	NO REPORT	NO REPORT	SOME	SOME	SLIGHT
14	1911	G. H. FOX	FEMALE	17	8	NO REPORT	NEGATIVE	NO REPORT		NO REPORT	SOME	SOME	NO REPORT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT
15	1911	ROBINSON	FEMALE	14	2 MO.	BACK OF HANDS	NEGATIVE	CONFIRMED		SOME	SOME	SOME	SOME	SOME	FREE	YES	SOME	NO REPORT	SOME
16	1911	D. O. ROBINSON	FEMALE	13	8	ARMS	NO REPORT	CONFIRMED		SOME	SOME	SOME	SOME	SOME	FREE	YES	SOME	SOME	NO REPORT
17	1911	HARTZELL	MALE	YOUNG SAME YEARS		NO REPORT	NO REPORT	CONFIRMED		---	---	---	LESIONS CHIEFLY LOCATED ON						
18	1911	FORDYCE	MALE	34	32	NO REPORT	MOTHER	NO REPORT		NO REPORT	SOME	NO REPORT	NO REPORT	SOME	SOME	NO REPORT	SOME	SOME	SOME
19	1911	GOLDENBERG	MALE	31	NO REPORT	NO REPORT	3 BROTHERS; 2 COUSINS; 1 DAUGHTER	NO REPORT		SOME	FREE	SOME	FREE	FREE	FREE	FREE	FREE	FREE	FREE
20	1911	"	FEMALE	2	5 WKS.	ON SCALP	3 UNCL'S; 2 SECOND COUSINS; ABOVE PATHER	NO REPORT		SOME	FREE	SOME	FREE	FREE	FREE	FREE	FREE	FREE	FREE
21	1912	HANS RITTER	FEMALE	35	NO REPORT	NO REPORT	NO REPORT	NO REPORT		UNIVERSALLY				DISTRIBUTED ALL					
22	1912	W. H. MOOK	MALE	45	8-9	SCALP	NEGATIVE	CONFIRMED		SEVERE	SEVERE	SEVERE	SEVERE	SOME	SOME	NO REPORT	SEVERE	SEVERE	NO REPORT
23	1912	"	MALE	18	5	EYE LIDS	NEGATIVE	CONFIRMED		SOME	SOME	SOME	UPPER PART OF SOME	NO REPORT	SOME	NO REPORT	SOME	SOME	NO REPORT
24	1912	"	MALE	21	4-5 MO.	SCALP	ONE BROTHER	CONFIRMED		SOME	SOME	SOME	SOME	NO REPORT	SOME	YES	SOME	SOME	SOME
25	1912	"	MALE	24	14	FACE	NO REPORT	CONFIRMED		SOME	SOME	SOME	FREE	SOME	SOME	NO REPORT	SEVERE	SEVERE	FREE
26	1913	TRIMBLE	MALE	34	32	FEET	MOTHER; SISTER; BROTHER; 2 NEPHEWS	CONFIRMED		SLIGHT	SOME	NO REPORT	SOME	SOME	SOME	NO REPORT	SOME	NO REPORT	SOME
27	1914	STEL WAGON	MALE	48	24	NO REPORT	NO REPORT	NO REPORT		NO REPORT	ECZMA	NO REPORT	SOME	NO REPORT	SOME	NO REPORT	SOME	SOME	SOME
28	1916	OWNS + H. FOX	MALE	74	23	ABDOMEN	NO REPORT	NO REPORT		SEVERE	NO REPORT	NO REPORT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT
29	1916	WHITHOUSE	FEMALE	23	13	SIDES OF NECK	NO REPORT	NO REPORT		SOME	SOME	SOME	NO REPORT	NO REPORT	SOME	NO REPORT	SOME	NO REPORT	SOME
30	1916	M. SCHEER	FEMALE	41	41	CUBITAL SPACE OF ARM	NEGATIVE	CONFIRMED		FREE	FREE	FREE	CUBITAL SPACE OF SOME	FREE	FREE	FREE	FREE	FREE	FREE
31	1918	A. SCHALEK	MALE	39	39	PALMS	NEGATIVE	CONFIRMED		SOME	MARKED	SOME	SOME	SOME	MARKED	YES	SOME	SOME	SOME
32	1919	BECHET	MALE	?	NO REPORT	NO REPORT	MOTHER; SISTER; BROTHER; 2 NEPHEWS	NO REPORT		SLIGHT	MARKED	SLIGHT	NO REPORT	MARKED	SEVERE	NO REPORT	SEVERE	NO REPORT	NO REPORT
33	1920	FWISE + H.J. PARKHURST	MALE	78	26	BACK OF HANDS	ONE DAUGHTER (DIED RECENTLY)	CONFIRMED		SOME	SOME	SOME	SOME	SOME	NO REPORT	YES	SEVERE	SEVERE	SEVERE
34	1920	"	FEMALE	21	13	AXILLA	NEGATIVE	NO REPORT		FREE	FREE	SOME	FREE	NO REPORT	NO REPORT	NO REPORT	SEVERE	SEVERE	SEVERE
35	1920	W.J. CHARGIN	FEMALE	32	29	LOWER BACK	MOTHER	NO REPORT		NO REPORT	NO REPORT	NO REPORT	SOME	NO REPORT	NO REPORT	NO REPORT	SLIGHT	SOME	NO REPORT
36	1921	FOX	FEMALE	28	8	NO REPORT	NEGATIVE	NO REPORT		SLOWLY				EXTENDED OVER					
37	1921	J.A. BORGHOFF	MALE	27 MO.	21 MO.	UPPER PART OF BACK	NEGATIVE	CONFIRMED		SOME	NO REPORT	NO REPORT	SOME	FREE	SLIGHT	NO REPORT	SEVERE	SEVERE	SEVERE
38	1921	HUBBLE; BIGOT; CHILLOW	MALE	16	15	NO REPORT	NO REPORT	CONFIRMED		SLIGHT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	SLIGHT	NO REPORT	NO REPORT
39	1921	ABRAMOWITZ	MALE	24	22	NO REPORT	NO REPORT	CONFIRMED		SLIGHT	NO REPORT	NO REPORT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	SOME	NO REPORT
40	1922	LANE	MALE	24	18	NO REPORT	NO REPORT	NO REPORT		NO REPORT	NO REPORT	NO REPORT	NO REPORT	SLIGHT	NO REPORT	NO REPORT	SOME	SOME	NO REPORT
41	1922	BECKMANN	FEMALE	45	3	NO REPORT	NO REPORT	NO REPORT		SOME	SOME	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT
42	1922	WISE	NO REPORT	26	25	NO REPORT	NO REPORT	NO REPORT		SLIGHT	NO REPORT	SEVERE	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	SOME	NO REPORT

CASE NO.	YEAR	REPORTED BY	SEX	AGE	AGE FIRST NOTICED	REGION WHERE FIRST NOTICED	FAMILY HISTORY	BIOPSY REPORT	OF THE LESIONS										
		DOCTOR			ABDOMEN	PUBLIC REGION			SACRAL REGION	PERINEUM	THIGHS	LEGS	TOP OF FEET	SOLES	MUCOUS MEMBRANES	PURITUS			
1	1886	DR. MORROW	MALE	21	16	BACK OF HANDS	NO REPORT	?	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE	MODERATE	FREE	MODERATE	NONE	
2	1889	WHITE	MALE	49	22	SHOULDERS	ONE DAUGHTER (BELOW CASE)	1890 CONFIRMED	SEVERE	SOME	SOME	SOME	MODERATE	SEVERE	MODERATE	FREE	SOME	SEVERE	
3	1890	WHITE	FEMALE	21	5-6	SIDES OF FOREHEAD	FATHER (ABOVE CASE)	CONFIRMED	SOME	SEVERE	NO REPORT	NO REPORT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	
4	1891	LUSTGARTEN	MALE	49	26	BACK OF HANDS	NEGATIVE	CONFIRMED	SEVERE	SOME	MARKED	MARKED	SLIGHT	SLIGHT	NO REPORT	FREE	NO REPORT	SEVERE	
5	1896	BOWEN	FEMALE	29	16	ON FACE	NEGATIVE	CONFIRMED	SOME	SEVERE	SEVERE	SEVERE	NO REPORT	SLIGHT	FREE	FREE	NO REPORT	VERY SEVERE	
6	1898	ELLIS	FEMALE	50	NO REBAT	NO REPORT	ONE SON + ONE DAUGHTER	CONFIRMED	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	SOME	NO REPORT	NO REPORT	NO REPORT	
7	1905	H. CURL	MALE	28	27	ON SIDES OF NOSE	NEGATIVE	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	
8	1906	HARTZELL	MALE	35	29	LOWER RT. CHEST	NO REPORT	CONFIRMED	NO REPORT	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	NO REPORT	
9	1906	E. STOUT	MALE	35	15	NO REPORT	NO REPORT	NO REPORT	NO REPORT	MARKED	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	MARKED	NO REPORT	NO REPORT	
10	1908	G. WENDE	MALE	37	17	THICKENING OF PALMS & SOLES	NEGATIVE	CONFIRMED	SOME	NO REPORT	SOME	SOME	SOME	SOME	SLIGHT	MODERATE	NO REPORT	NO REPORT	
11	1908	MACLEOD + COLLINGS	MALE	19	1	NO REPORT	2 BROTHERS AS BELOW	NO REPORT	NO REPORT	SOME	SLIGHT	SLIGHT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	
12	1908	"	MALE	13	1	NO REPORT	2 BROTHERS ABOVE + 1 BELOW	NO REPORT	NO REPORT	SOME	SLIGHT	SLIGHT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	
13	1908	"	MALE	10	2	NO REPORT	2 BROTHERS AS ABOVE	NO REPORT	NO REPORT	SOME	SLIGHT	SLIGHT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	
14	1911	G. H. FOX	FEMALE	17	8	NO REPORT	NEGATIVE	NO REPORT	SOME	NO REPORT	NO REPORT	SOME	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	
15	1911	ROBINSON	FEMALE	14	2 MO.	BACK OF HANDS	NEGATIVE	CONFIRMED	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	NO REPORT	FREE	NO REPORT	
16	1911	D. O. ROBINSON	FEMALE	13	8	ARMS	NO REPORT	CONFIRMED	NO REPORT	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	SEVERE	
17	1911	HARTZELL	MALE	YOUNG	SOME YEARS	NO REPORT	NO REPORT	CONFIRMED	LEFT SIDE OF ABDOMEN	NO FURTHER MENTION OF DISTRIBUTION								N. R.	
18	1911	FORDYCE	MALE	34	32	NO REPORT	MOTHER	NO REPORT	NO REPORT	N. R.	N. R.	SOME	SOME	N. R.	N. R.	N. R.	N. R.	TENDERNESS ON WALKING	
19	1911	GOLDENBERG	MALE	31	NO REPORT	NO REPORT	3 BROTHERS; 2 COUSINS; 1 DAUGHTER	NO REPORT	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	N. R.	
20	1911	"	FEMALE	2	5 WKS.	ON SCALP	3 UNCL. 2 SECOND COUSINS; ABOVE FATHER	NO REPORT	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	N. R.	
21	1912	HANS RITTER	FEMALE	35	NO REPORT	NO REPORT	NO REPORT	NO REPORT	OVER THE BODY -- -- -- -- --										N. R.
22	1912	W. H. MOOK	MALE	45	8-9	SCALP	NEGATIVE	CONFIRMED	SOME	N. R.	N. R.	SEVERE	SOME	N. R.	N. R.	SOME	SEVERE	SEVERE	
23	1912	"	MALE	18	5	EYELIDS	NEGATIVE	CONFIRMED	SOME	N. R.	FREE	FREE	FREE	N. R.	N. R.	N. R.	FREE	N. R.	
24	1912	"	MALE	21	4-5 MO.	SCALP	ONE BROTHER	CONFIRMED	FEW	FREE	FREE	FREE	N. R.	SOME	SOME	SOME	FREE	N. R.	
25	1912	"	MALE	24	14	FACE	NO REPORT	CONFIRMED	NO REPORT	N. R.	FREE	FREE	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	
26	1913	TRIMBLE	MALE	34	32	FEET	MOTHER; SISTER; BROTHER; 2 NEPHEWS	CONFIRMED	NO REPORT	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	SOME	N. R.	N. R.	
27	1914	STELWAGON	MALE	48	24	NO REPORT	NO REPORT	NO REPORT	SOME	N. R.	N. R.	N. R.	SOME	N. R.	N. R.	N. R.	N. R.	N. R.	
28	1916	OGHS + H. FOX	MALE	74	23	ABDOMEN	NO REPORT	NO REPORT	SEVERE	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	
29	1916	WHITEHOUSE	FEMALE	23	13	SIDES OF NECK	NO REPORT	NO REPORT	SOME	N. R.	N. R.	SOME	SOME	N. R.	N. R.	SOME	N. R.	N. R.	
30	1916	M. SCHEER	FEMALE	41	3 MO. LONG	CUBITAL SPACE OF ARM	NEGATIVE	CONFIRMED	FREE	FREE	FREE	SLIGHT	SLIGHT	FREE	FREE	FREE	FREE	SEVERE	
31	1918	A. SCHALEK	MALE	39	3 MO. AGO	PALMS	NEGATIVE	CONFIRMED	SOME	SOME	SOME	SOME	SOME	N. R.	N. R.	MARKED	N. R.	AT TIMES SEVERE	
32	1919	BECHET	MALE	?	NO REPORT	NO REPORT	MOTHER; SISTER; BROTHER; 2 NEPHEWS	NO REPORT	NO REPORT	N. R.	N. R.	N. R.	N. R.	N. R.	SEVERE	SEVERE	N. R.	N. R.	
33	1920	F. WISE + N. J. PARKHURST	MALE	78	26	BACK OF HANDS	ONE DAUGHTER (DIED RECENTLY)	CONFIRMED	SEVERE	SOME	SEVERE	SOME	SOME	N. R.	N. R.	N. R.	N. R.	SOME	
34	1920	"	FEMALE	21	13	AXILLA	NEGATIVE	NO REPORT	FEW	FREE	SOME	FREE	FREE	FREE	N. R.	N. R.	N. R.	N. R.	
35	1920	W. J. CHARGIN	FEMALE	32	29	LOWER BACK	MOTHER	NO REPORT	NO REPORT	N. R.	SOME	N. R.	SLIGHT	SOME	N. R.	N. R.	N. R.	SLIGHT	
36	1921	FOX	FEMALE	28	8	NO REPORT	NEGATIVE	NO REPORT	THAT OF 10 YEARS AGO -- -- -- -- --										N. R.
37	1921	J. A. BORGHOFF	MALE	27 MO.	21 MO.	UPPER PART OF BACK	NEGATIVE	CONFIRMED	SEVERE	N. R.	SLIGHT	SLIGHT	SOME	N. R.	N. R.	SLIGHT	SEVERE	SEVERE	
38	1921	HUDEL; BIGOT; CRILLOW	MALE	16	15	NO REPORT	NO REPORT	CONFIRMED	NO REPORT	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	
39	1921	ABRAMOWITZ	MALE	24	22	NO REPORT	NO REPORT	CONFIRMED	NO REPORT	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	
40	1922	LANE	MALE	24	18	NO REPORT	NO REPORT	NO REPORT	NO REPORT	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	
41	1922	BECKMANN	FEMALE	45	3	NO REPORT	NO REPORT	NO REPORT	NO REPORT	N. R.	N. R.	N. R.	INDIVIDUAL SOME	N. R.	N. R.	N. R.	N. R.	N. R.	
42	1922	WISE	MALE	26	25	NO REPORT	NO REPORT	NO REPORT	NO REPORT	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	N. R.	

CASE No	REPORTED BY	DOCTOR	SEX	AGE	AGE FIRST NOTICED	REGION WHERE FIRST NOTICED	FAMILY HISTORY	BIOPSY REPORT	TREATMENT	RESULTS
1	1886	DR. MORROW	MALE	21	16	BACK OF HANDS	NO REPORT	?	NONE REPORTED	NONE REPORTED
2	1889	WHITE	MALE	49	22	SHOULDERS	ONE DAUGHTER (BELOW CASE)	1890 CONFIRMED	NONE REPORTED	NONE REPORTED
3	1890	WHITE	FEMALE	21	5-6	SIDES OF FOREHEAD	FATHER (ABOVE CASE)	CONFIRMED	NONE REPORTED	NONE REPORTED
4	1891	LUSTGARTEN	MALE	49	26	BACK OF HANDS	NEGATIVE	CONFIRMED	NONE REPORTED	NONE REPORTED
5	1896	BOWEN	FEMALE	29	16	ON FACE	NEGATIVE	CONFIRMED	SULPHUR + SALICYLIC ACID OINTMENT DAILY WASHING SCALP	CLEARED TO SLIGHT DEGREE ON FACE + SCALP
6	1898	ELLIOT	FEMALE	50	NO REPT	NO REPORT	ONE SON + ONE DAUGHTER	CONFIRMED	AGE OF 38 AREAS ON KNEES + FEET CORRECTED	WELL UNTIL A.Y.R. AGO NOW SEVERE AS BEFORE
7	1905	H. CURL	MALE	28	27	ON SIDES OF NOSE	NEGATIVE	NO REPORT	SALICYLIC ACID OINTMENT PRESSED OUT PLUGS WITH BLUNT SPON.	MUCH IMPROVEMENT DISMISSED IN ONE WK.
8	1906	HARTZELL	MALE	35	29	LOWER RT. CHEST	NO REPORT	CONFIRMED	NONE REPORTED	NONE REPORTED
9	1906	E. STOUT	MALE	35	15	NO REPORT	NO REPORT	NO REPORT	X-RAY (APRIL 1906 TO JAN. 1907) 30 DOSES 5 MIN. LONG	MUCH IMPROVEMENT IN AREAS EXPOSED + AREAS NOT EXPOSED
10	1908	G. WENDE	MALE	37	17	THICKENING OF PALMS + SOLES	NEGATIVE	CONFIRMED	X-RAY	SUPERFICIALLY OF SOME VALUE NO EFFECT ON AREA
11	1908	MACLEOD + COLLINGS	MALE	19	1	NO REPORT	2 BROTHERS AS BELOW	NO REPORT	NONE REPORTED	NONE REPORTED
12	1908	" " "	MALE	13	1	NO REPORT	2 BROTHERS 1 ABOVE + 1 BELOW	NO REPORT	NONE REPORTED	NONE REPORTED
13	1908	" " "	MALE	10	2	NO REPORT	2 BROTHERS AS ABOVE	NO REPORT	NONE REPORTED	NONE REPORTED
14	1911	G. H. FOX	FEMALE	17	8	NO REPORT	NEGATIVE	NO REPORT	X-RAY (OCT. 25 - DEC. 29)	GREAT DEAL OF IMPROVEMENT
15	1911	ROBINSON	FEMALE	14	2 Mo.	BACK OF HANDS	NEGATIVE	CONFIRMED	NONE REPORTED	NONE REPORTED
16	1911	D. O. ROBINSON	FEMALE	13	8	ARMS	NO REPORT	CONFIRMED	NONE REPORTED	NONE REPORTED
17	1911	HARTZELL	MALE	YOUNG	SAME YEARS	NO REPORT	NO REPORT	CONFIRMED	NONE REPORTED	NONE REPORTED
18	1911	FORDYCE	MALE	34	32	NO REPORT	MOTHER	NO REPORT	NONE REPORTED	NONE REPORTED
19	1911	GOLDENBERG	MALE	31	NO REPORT	NO REPORT	3 BROTHERS; 2 COUSINS; 1 DAUGHTER	NO REPORT	NONE REPORTED	NONE REPORTED
20	1911	" " "	FEMALE	2	5 WKS.	ON SCALP	3 UNCL. 2 SECOND COUSINS; ABOVE FATHER	NO REPORT	NONE REPORTED	NONE REPORTED
21	1912	HANS RITTER	FEMALE	35	NO REPORT	NO REPORT	NO REPORT	NO REPORT	2 SUCCESSIVE DOSES OF X-RAY OVER EVERY AREA	VERY GOOD RESULTS
22	1912	W. H. MOOK	MALE	45	8-9	SCALP	NEGATIVE	CONFIRMED	X-RAY FOR LAST 7 YRS.	ALMOST ALL GONE EXCEPT FEW IN GLUTEAL AREA
23	1912	" " "	MALE	18	5	EYELIDS	NEGATIVE	CONFIRMED	X-RAY FOR A FEW WKS.	SOME IMPROVEMENT - BUT PATIENT LEFT
24	1912	" " "	MALE	21	4-5 Mo.	SCALP	ONE BROTHER	CONFIRMED	X-RAY EVERY 2-3 DAYS (40 TREATMENTS)	MARKED IMPROVEMENT
25	1912	" " "	MALE	24	14	FACE	NO REPORT	CONFIRMED	X-RAY	MARKED IMPROVEMENT
26	1913	TRIMBLE	MALE	34	32	FEET	MOTHER; SISTER; BROTHER; 2 NEPHEWS	CONFIRMED	NONE REPORTED	NONE REPORTED
27	1914	STELWAGON	MALE	48	24	NO REPORT	NO REPORT	NO REPORT	NONE REPORTED	NONE REPORTED
28	1916	OGHS + H. FOX	MALE	74	23	ABDOMEN	NO REPORT	NO REPORT	NONE REPORTED	NONE REPORTED
29	1916	WHITEHOUSE	FEMALE	23	13	SIDES OF NECK	NO REPORT	NO REPORT	NONE REPORTED	NONE REPORTED
30	1916	M. SCHEER	FEMALE	41	3 Mo. LONG	CUBITAL SPACE OF ARM	NEGATIVE	CONFIRMED	X-RAY 1 UNIT IN 4 DIVIDED DOSES	IN 3 WKS. PATCHES FLATTENED OUT
31	1918	A. SCHALEK	MALE	39	39	PALMS	NEGATIVE	CONFIRMED	X-RAY	3 Mo. MARKED IMPROVEMENT
32	1919	BECHET	MALE	?	NO REPORT	NO REPORT	MOTHER; SISTER; BROTHER; 2 NEPHEWS	NO REPORT	NONE REPORTED	NONE REPORTED
33	1920	F. WISE + N. J. PARKHURST	MALE	78	26	BACK OF HANDS	ONE DAUGHTER (DIED RECENTLY)	CONFIRMED	NONE REPORTED	NONE REPORTED
34	1920	" " "	FEMALE	21	13	AXILLA	NEGATIVE	NO REPORT	1/4 UNIT DOSES ONCE EVERY 2 WKS. = FOR 6 WKS.	ALL SHOW 70% IMPROVEMENT EXCEPT IN AXILLA
35	1920	W. J. CHARGIN	FEMALE	32	29	LOWER BACK	MOTHER	NONE MADE	NONE REPORTED	NONE REPORTED
36	1921	DR. FOX REPORTED IN 1911 FOX.	FEMALE	28	8	NO REPORT	NEGATIVE	NO REPORT	X-RAY + RADIUM IN LAST 10 YRS.	REMOVED SOME AREAS BUT ALWAYS NEW AREAS
37	1921	J. A. BORGHOFF	MALE	27 Mo.	21 Mo.	UPPER PART OF BACK	NEGATIVE	CONFIRMED	X-RAY	SOME IMPROVEMENT BUT PROGRESSED
38	1921	HUDEL; BIGOT; CRILLON	MALE	16	15	NO REPORT	NO REPORT	CONFIRMED	NONE REPORTED	NONE REPORTED
39	1921	ABRAMOWITZ	MALE	24	22	NO REPORT	NO REPORT	CONFIRMED	NONE REPORTED	NONE REPORTED
40	1922	LANE	MALE	24	18	NO REPORT	NO REPORT	NO REPORT	NONE REPORTED	NONE REPORTED
41	1922	BECKMANN	FEMALE	45	3	NO REPORT	NO REPORT	NO REPORT	X-RAY	DISAPPEARED LEAVING ATROPHY OF EXPOSED SKIN
42	1922	WISE	FEMALE	26	25	NO REPORT	NO REPORT	NO REPORT	NONE REPORTED	NONE REPORTED

CHART II

REPORTED BY		SEX	AGE	AGE FIRST NOTICED	REGION WHERE FIRST NOTICED	FAMILY HISTORY	BIOPSY REPORT	PRESENT							EXTENT				
CASE NO.	YEAR	DOCTOR						SCALP	FACE	NECK	ARMS	BACK OF HANDS	PALMS	NAIHS	CHEST	BACK	AXILLA		
43	1922	LIPPERT	ABSTRACT 42	MALE	35	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
44	1922	LOUSTE + BARBIER	43	FEMALE	36	SINCE BIRTH	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
45	1923	SKLARTZ	ABSTRACT 44	MALE	43	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
46	1923	BRONIER + REISEK	45	FEMALE	24	18	RIGHT AXILLA	NEGATIVE	CONFIRMED	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	SOME	N.R.		
47	1923	ESCHER + PROTRIER	ABSTRACT 46	MALE	21	18	N.R.	N.R.	SCRAPINGS CONFIRMED	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	MID-ONLY SOME		
48	1923	MAC DONALD	47	MALE	20	12	N.R.	N.R.	NOT DONE	FREE	N.R.	N.R.	FLEXOR SOME	SOME	N.R.	N.R.	SOME		
49	1923	H. FOX	48	FEMALE	71	69	N.R.	NEGATIVE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
50	1924	THORNLEY	49	F.F. FEMALE	21	13	CHIN	NEGATIVE	N.R.	SOME	SOME	N.R.	N.R.	SOME	N.R.	N.R.	N.R.		
51	1924	SWEITZER	50	MRS. M.C. FEMALE	34	26	N.R.	N.R.	CONFIRMED	SOME	SOME	SOME	N.R.	SOME	N.R.	N.R.	SLIGHT		
52	1924	"	50	FEMALE	11	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
53	1924	W.H. SCHNEIDER	51	MALE	42	12	BACK OF HANDS	SON AS BELOW CASE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
54	1924	"	51	MALE	11	N.R.	N.R.	FATHER ABOVE CASE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
55	1925	OULMANN	52	MRS. S. FEMALE	52	45	RIGHT BREAST	NEGATIVE	NONE DONE	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SOME		
56	1925	FREE MAN	53	FEMALE	47	32	SIDES OF ABDOMEN	NEGATIVE	CONFIRMED	N.R.	SOME	N.R.	N.R.	SOME	N.R.	N.R.	N.R.		
57	1925	MILJAN + PERIN	54	FEMALE	24	15	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	SOME	SOME	N.R.		
58	1926	PHILLIPS	55	M.H. MALE	55	7	N.R.	FATHER + 1 SON	N.R.	SEVERE	N.R.	N.R.	N.R.	N.R.	N.R.	SEVERE	SEVERE		
59	1926	B. FOX	56	U.F. FEMALE	33	8	N.R.	NEGATIVE	N.R.	REPORTED IN 1911 + 1921 SINCE									
60	1926	WHITEHOUSE	57	FEMALE	32	27	N.R.	N.R.	N.R.	SOME	SOME	N.R.	N.R.	SOME	N.R.	N.R.	SOME		
61	1927	FINK	58	MALE	18	11	FOREHEAD + SCALP	N.R.	N.R.	SOME	SOME	N.R.	N.R.	SOME	N.R.	N.R.	SOME		
62	1928	LANE	59	FEMALE	18	11	ANTERIOR PORTION OF SCALP	N.R.	N.R.	SEVERE	SEVERE	SOME	SOME	SLIGHT	SOME	N.R.	N.R.		
63	1928	VALKER	60	FEMALE	15	3	HANDS	N.R.	N.R.	N.R.	SOME	SOME	N.R.	SOME	SOME	N.R.	N.R.		
64	1928	CANNON	61	MALE	ABOUT 4 YRS. AGO		BACK OF HANDS	NEGATIVE	CONFIRMED	SEVERE	SOME	SEVERE	SOME	SOME	N.R.	SOME	SOME		
65	1929	H. FOX	62	I.M. FEMALE	22	18	GENERALIZED	NEGATIVE	CONFIRMED	FREE	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	SOME		
66	1929	TRAUB	63	L.R. FEMALE	35	17	NECK	N.R.	CONFIRMED	N.R.	SOME	SOME	GENERALIZED					OVER BODY	
67	1929	FERNANDEZ + VAZQUEZ	64	MONSIEUR P.W. MALE	24 YRS. AGO		NECK + CHEST	NEGATIVE	CONFIRMED	N.R.	N.R.	SOME	SOME	N.R.	N.R.	N.R.	SOME		
68	1930	KEIM	65	MALE	17	13	BACK + LEGS	NEGATIVE	CONFIRMED	SOME	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	SOME		
69	1930	C.E. SCHOFF	66	FEMALE	22	8	FACE SCALP BASE OF NECK	NEGATIVE	CONFIRMED	SOME	SOME	SOME	SOME	N.R.	N.R.	N.R.	SOME		
70	1930	"	66	FEMALE	31	7	BASE OF NECK + AXILLA	MOTHER + SISTER + BELOW DAUGHTER	CONFIRMED	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	SOME		
71	1930	"	66	FEMALE	10	7	BASE OF NECK	GRAND-MOTHER + AUNT + ABOVE MOTHER	CONFIRMED	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.		
72	1930	S.E. SWEITZER	67	FEMALE	39	26	N.R.	SAME AS IN 1924	CONFIRMED	SOME	SOME	SOME	N.R.	SOME	N.R.	N.R.	SOME		
73	1931	GILLESPIE	68	R.S. FEMALE	8	7	N.R.	MOTHER + 2 BROTHERS	N.R.	SLIGHT	SOME	SOME	N.R.	N.R.	N.R.	N.R.	SOME		
74	1931	"	69	C.S. MALE	20	8	FACE + SCALP	MOTHER + 1 BROTHER + ABOVE BROTHER	N.R.	SOME	SOME	N.R.	SOME	N.R.	N.R.	N.R.	SOME		
75	1931	P. BECHET	70	S.C. FEMALE	28	28	NECK	N.R.	N.R.	SOME	N.R.	SOME	SOME	N.R.	SOME	N.R.	SOME		
76	1931	A. WALZER	71	U.T. FEMALE	39	16	FACE	N.R.	CONFIRMED	SEVERE	SEVERE	SOME	SOME	N.R.	N.R.	SOME	SEVERE		
77	1932	E. TROW	72	MALE	25	10	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME		
78	1932	L. HOLLANDER	73	MRS. R.R. FEMALE	21	9	N.R.	N.R.	N.R.	GENERALIZED								DISTRIBUTION	
79	1932	M. BROWN	74	B.M. MALE	35	29	N.R.	N.R.	NONE DONE	MILD CASE BUT NO									
80	1932	M.T. VAN STUDDIFORD	75	MALE	32	13	CHEST + FACE	N.R.	CONFIRMED	SLIGHT	SOME	N.R.	SOME	N.R.	N.R.	SOME	N.R.		
81	1932	A. WALZER	76	F.F. FEMALE	29	14	FOREHEAD	N.R.	N.R.	SOME	SOME	SOME	N.R.	N.R.	N.R.	SOME	N.R.		
82	1932	J.F. FRASER	77	G.M. FEMALE	29	29	N.R.	N.R.	NONE DONE	N.R.	N.R.	SOME	SOME	N.R.	N.R.	N.R.	SOME		
83	1933	F. WISE	78	G.R. FEMALE	23	13	N.R.	GRAND-MOTHER + MOTHER	CONFIRMED	SOME	SOME	SOME	N.R.	SOME	SOME	N.R.	SOME		
84	1933	F. VERO	79	C.A. MALE	38	17	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	SOME		

CASE NO.	YEAR	REPORTED BY	SEX	AGE	AGE FIRST NOTICED	REGION WHERE FIRST NOTICED	FAMILY HISTORY	BIOPSY REPORT	OF THE LESIONS										
		DOCTOR			ABDOMEN	PUBIC REGION			SACRAL REGION	PERINEUM	THIGHS	LEGS	FEET	SOLES	MUCOUS MEMBRANES	PURITUS			
43	1922	LIPPERT ^{ABSTRACT 42}	MALE	35	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
44	1922	LOUSTE + BARBIER ⁴³	FEMALE	36	SINCE BIRTH	N.R.	N.R.	CONFIRMED	MENTION OF DISTRIBUTION---										N.R.
45	1923	SKLARTZ ^{ABSTRACT 44}	MALE	43	N.R.	N.R.	N.R.	N.R.	MENTION OF DISTRIBUTION---										N.R.
46	1923	BRONIER + REISEK ⁴⁵	FEMALE	24	18	RIGHT AXILLA	NEGATIVE	CONFIRMED	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
47	1923	ESCHER + PROTRIER ^{ABSTRACT 46}	MALE	21	18	N.R.	N.R.	CONFIRMED	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
48	1923	MAG DONALD ⁴⁷	MALE	20	12	N.R.	N.R.	NOT DONE	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	NONE		
49	1923	H. FOX ⁴⁸	FEMALE	71	69	N.R.	NEGATIVE	CONFIRMED	RT. SIDE ONLY SOME	N.R.	N.R.	N.R.	N.R.	RT. SIDE ONLY SOME	N.R.	N.R.	SOME		
50	1924	THORNLEY ⁴⁹	FEMALE	21	13	CHIN	NEGATIVE	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	NONE		
51	1924	SWEITZER ⁵⁰	FEMALE	34	26	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
52	1924	"	FEMALE	11	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
53	1924	W.H. SCHNEIDER ⁵¹	MALE	42	12	BACK OF HANDS	SON AS BELOW CASE	CONFIRMED	NO MENTION OF DISTRIBUTION---										N.R.
54	1924	"	MALE	11	N.R.	N.R.	FATHER ABOVE CASE	CONFIRMED	NO MENTION OF DISTRIBUTION---										N.R.
55	1925	OULMANN ⁵²	FEMALE	52	45	RIGHT BREAST	NEGATIVE	NONE DONE	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	NONE		
56	1925	FREE MAN ⁵³	FEMALE	47	32	SIDES OF ABDOMEN	NEGATIVE	CONFIRMED	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
57	1925	MILJAN + PERIN ⁵⁴	FEMALE	24	15	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
58	1926	PHILLIPS ⁵⁵	MALE	55	7	N.R.	FATHER + 1 SON	N.R.	N.R.	SEVERE	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	SEVERE		
59	1926	B. FOX ⁵⁶	FEMALE	33	8	N.R.	NEGATIVE	N.R.	THEN GRADUALLY PROGRESSED-----										N.R.
60	1926	WHITEHOUSE ⁵⁷	FEMALE	32	27	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.		
61	1927	FINK ⁵⁸	MALE	18	11	FOREHEAD + SCALP	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SEVERE		
62	1928	LANE ⁵⁹	FEMALE	18	11	ANTERIOR PORTION OF SCALP	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	SOME	SOME		
63	1928	VALKER ⁶⁰	FEMALE	15	3	HANDS	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	NONE		
64	1928	CANNON ⁶¹	MALE	ABOUT 4 YRS. AGO	BACK OF HANDS	NEGATIVE	CONFIRMED	SOME	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	SOME	N.R.		
65	1928	H. FOX ⁶²	FEMALE	22	18	GENERALIZED	NEGATIVE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	SEVERE	N.R.	N.R.	N.R.		
66	1928	TRAUB ⁶³	FEMALE	35	17	NECK	N.R.	CONFIRMED	NO REPORT OF ANY OTHER AREAS-----										
67	1929	FERNANDEZ + VAZQUEZ ⁶⁴	MALE	2 YRS. AGO	NECK + CHEST	NEGATIVE	CONFIRMED	SAYS OTHER AREAS SLIGHT BUT NO MENTION										N.R.	
68	1930	KEIM ⁶⁵	MALE	17	13	BACK + LEGS	NEGATIVE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.		
69	1930	C.E. SCHOFF ⁶⁶	FEMALE	22	8	FACE SCALP BASE OF NECK	NEGATIVE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
70	1930	"	FEMALE	31	7	BASE OF NECK + AXILLA	MOTHER + SISTER + BELOW DAUGHTER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
71	1930	"	FEMALE	10	7	BASE OF NECK	GRAND-MOTHER + AUNT + ABOVE MOTHER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
72	1930	S.E. SWEITZER ⁶⁷	FEMALE	39	26	N.R.	SAME AS IN 1924	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
73	1931	GILLESPIE ⁶⁸	FEMALE	8	7	N.R.	MOTHER + 2 BROTHERS	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
74	1931	"	MALE	20	8	FACE + SCALP	MOTHER + 1 BROTHER + ABOVE BROTHER	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	SOME	N.R.		
75	1931	P. BECHET ⁶⁹	FEMALE	28	28	NECK	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
76	1931	A. WALZER ⁷⁰	FEMALE	39	16	FACE	N.R.	CONFIRMED	SOME	SEVERE	N.R.	SEVERE	N.R.	N.R.	N.R.	SOME	N.R.		
77	1932	E. TROW ⁷¹	MALE	25	10	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	SOME	N.R.		
78	1932	L. HOLLANDER ⁷²	FEMALE	21	9	N.R.	N.R.	N.R.	NO REPORT OF AREAS INVOLVED---										N.R.
79	1932	M. BROWN ⁷³	MALE	35	29	N.R.	N.R.	NONE DONE	REPORT OF AREAS INVOLVED---										N.R.
80	1932	M.T. VAN STUDDIFORD ⁷⁴	MALE	32	13	CHEST + FACE	N.R.	CONFIRMED	SOME	N.R.	SOME	SOME	SEVERE	SOME	SLIGHT	SEVERE	SOME		
81	1932	A. WALZER ⁷⁵	FEMALE	29	14	FOREHEAD	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
82	1932	J.F. FRASER ⁷⁶	FEMALE	29	29	N.R.	N.R.	NONE DONE	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
83	1933	F. WISE ⁷⁷	FEMALE	23	13	N.R.	GRAND-MOTHER + MOTHER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
84	1933	F. VERO ⁷⁸	MALE	38	17	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME		

REPORTED BY	DOCTOR	SEX	AGE	AGE FIRST NOTICED	REGION WHERE FIRST NOTICED	FAMILY HISTORY	BIOPSY REPORT	TREATMENT	RESULTS
43 1922	LIPPERT ^{ABSTRACT 42}	MALE	35	N.R.	N.R.	N.R.	N.R.	NONE REPORTED	NONE REPORTED
44 1922	LOUSTE + BARBIER ⁴³	FEMALE	36	SINCE BIRTH	N.R.	N.R.	CONFIRMED	N. R.	N. R.
45 1923	SKLARTZ ^{ABSTRACT 44}	MALE	43	N.R.	N.R.	N.R.	N.R.	N. R.	N. R.
46 1923	BRONIER + REISEK ⁴⁵	FEMALE	24	18	RIGHT AXILLA	NEGATIVE	CONFIRMED	N. R.	N. R.
47 1923	ESCHER + PROTRIER ^{ABSTRACT 46}	MALE	21	18	N. R.	N. R.	SCRAPIES CONFIRMED	N. R.	N. R.
48 1923	MAG DONALD ⁴⁷	MALE	20	12	N. R.	N. R.	NOT DONE	N. R.	N. R.
49 1923	H. FOX ⁴⁸	FEMALE	71	69	N. R.	NEGATIVE	CONFIRMED	N. R.	N. R.
50 1924	THORNLEY ⁴⁹	R. F. FEMALE	21	13	CHIN	NEGATIVE	N. R.	X-RAY FOR LAST 2 WKS.	ERYTHEMAE NO RESULTS CAN BE READ
51 1924	SWETZER ⁵⁰	MRS. M.C. FEMALE	34	26	N. R.	GRAND-GRAND-FATHER GRAND-FATHER FATHER NEICE AS BELOW CASE	CONFIRMED	N. R.	N. R.
52 1924	" " ⁵¹	FEMALE	11	N.R.	N. R.	GRAND-GRAND-FATHER GRAND-FATHER GRAND-GRAND-FATHER AUNT ABOVE CASE	N. R.	N. R.	N. R.
53 1924	W.H. SCHNEIDER ⁵²	MALE	42	12	BACK OF HANDS	SON AS BELOW CASE	CONFIRMED	N. R.	N. R.
54 1924	" " " ⁵³	MALE	11	N.R.	N. R.	FATHER ABOVE CASE	CONFIRMED	N. R.	N. R.
55 1925	OLLMANN ⁵⁴	MRS. S. FEMALE	52	45	RIGHT BREAST	NEGATIVE	NONE DONE	X-RAY 1/4 UNIT DOSES	CONSIDERABLE IMPROVEMENT
56 1925	FREE MAN ⁵⁵	FEMALE	47	32	SIDES OF ABDOMEN	NEGATIVE	CONFIRMED	N. R.	N. R.
57 1925	MILJAN + PERIN ^{ABSTRACT 56}	FEMALE	24	15	N. R.	N. R.	N. R.	N. R.	N. R.
58 1926	PHILLIPS ⁵⁷	R.H. MALE	55	7	N. R.	FATHER + 1 SON 2 BROTHERS 1 SISTER	N. R.	N. R.	N. R.
59 1926	B. FOX ^{REARTRON 1921 58}	U.T. FEMALE	33	8	N. R.	NEGATIVE	N. R.	X-RAY + RADIUM SINCE 1911	PROGRESSED DESPITE TEMPORARY RELIEF
60 1926	VWHITEHOUSE ⁵⁹	FEMALE	32	27	N. R.	GRAND-MOTHER MOTHER 2 UNCLE 1 BROTHER 1 POSSIBLE DAUGHTER 1912	N. R.	N. R.	N. R.
61 1927	FINK ⁶⁰	MALE	18	11	FOREHEAD + SCALP	N. R.	N. R.	N. R.	N. R.
62 1928	LANE ⁶¹	FEMALE	18	11	AFTER BOIL ON FOREHEAD ANTERIOR PORTION OF SCALP	N. R.	N. R.	X-RAY	SOME RELIEF HYPERKERATOSIS OF PALMS ALLEVIATED
63 1928	VALKER ⁶²	FEMALE	15	3	HANDS	N. R.	N. R.	X-RAY	SLIGHT IMPROVEMENT
64 1928	CANNON ⁶³	MALE ABOUT 4 YRS. AGO	18	18	BACK OF HANDS	NEGATIVE	CONFIRMED	N. R.	N. R.
65 1928	H. FOX ⁶⁴	I.M. FEMALE	22	18	AFTER ATTACK OF PTOMALINE GENERALIZED	NEGATIVE	CONFIRMED	GREEN SOAP VIGOROUSLY	HARDLY NOTICEABLE ON SIDES OF TRUNK
66 1928	TRAUB ⁶⁵	L.R. FEMALE	35	17	NECK	FATHER 1 SISTER HAD SOMETHING SIMILAR BUT GOT BETTER WITH ARSENIC	CONFIRMED	N. R.	N. R.
67 1929	FERNANDEZ + VAZQUEZ ^{MONSERRAT 66}	YOUNG MAN	2 YRS. AGO	18	NECK + CHEST	NEGATIVE	CONFIRMED	N. R.	N. R.
68 1930	KEIM ⁶⁷	P.W. MALE	17	13	BACK + LEGS	NEGATIVE	CONFIRMED	N. R.	N. R.
69 1930	C.E. SCHOFF ⁶⁸	FEMALE	22	8	FACE SCALP BASE OF NECK	NEGATIVE	CONFIRMED	X-RAY + THYROID EXTRACT	NO REPORT
70 1930	" " " " ⁶⁹	FEMALE	31	7	BASE OF NECK + AXILLA	MOTHER + SISTER + BELOW DAUGHTER	CONFIRMED	N. R.	N. R.
71 1930	" " " " ⁷⁰	FEMALE	10	7	BASE OF NECK	GRAND-MOTHER + AUNT + ABOVE MOTHER	CONFIRMED	N. R.	N. R.
72 1930	S.E. SWEITZER ^{REPORTED IN 1924 71}	FEMALE	39	26	N.R.	SAME AS IN 1924	CONFIRMED	ACUTE WEEPING ERUPTION ON FOREHEAD 5.90 SALICYLIC ACID PETROLEUM	WEEPING ERUPTION GREATLY IMPROVED
73 1931	GILLESPIE ^{69 72}	R.S. FEMALE	8	7	N. R.	MOTHER + 2 BROTHERS ONE BELOW	N. R.	N. R.	N. R.
74 1931	" " " " ⁷³	C.S. MALE	20	8	FACE + SCALP	MOTHER + 1 BROTHER + ABOVE BROTHER	N. R.	N. R.	N. R.
75 1931	P. BECHET ⁷⁴	S.C. FEMALE	28	28	NECK	N. R.	N. R.	N. R.	N. R.
76 1931	A. WALZER ⁷⁵	U.T. FEMALE	39	16	FACE	N. R.	CONFIRMED	X-RAY + RADIUM	TEMPORARY RELIEF BUT PROGRESSED SLOWLY
77 1932	E. TROW ⁷⁶	MALE	25	10	N. R.	N. R.	N. R.	N. R.	N. R.
78 1932	L. HOLLANDER ⁷⁷	MRS. A.R. FEMALE	21	9	N. R.	N. R.	N. R.	INTRAVENOUS NA-THIO SULPHATE INTRAMUSCULAR WARM BLOOD CUT OUT ON DIET TO WHICH SENSITIVE	SOME IMPROVEMENT NOTED
79 1932	M. BROWN ⁷⁸	B.M. MALE	35	29	N. R.	N. R.	NONE DONE	6 X-RAY TREATMENTS OF 1/4 SKIN UNITS	MUCH FLATTENING + IMPROVEMENT
80 1932	M.T. VAN STUDDIFORD ⁷⁹	MALE	32	13	CHEST + FACE	N. R.	CONFIRMED	CAUTERY OF LESIONS 2 YRS. AGO.	TEMPORARY RELIEF, NOW REAPPEARING + PROGRESSING
81 1932	A. WALZER ⁸⁰	F. FEMALE	29	14	FOREHEAD	N. R.	N. R.	ULTRA-VIOLET-RAY INJECTIONS? LOCAL APPLICATIONS	N. R.
82 1932	J.F. FRASER ⁸¹	G.M. FEMALE	29	29	N.R.	N. R.	NONE DONE	5 DOSES OF 1/4 UNITS ABOUT 70 ROENTGENS	NO APPARENT BENEFIT AS YET
83 1933	F. WISE ⁸²	G.R. FEMALE	23	13	N. R.	GRAND-MOTHER + MOTHER	CONFIRMED	N. R.	N. R.
84 1933	F. VERO ⁸³	C.A. MALE	38	17	LEFT CHEST DEPT. ABDOMEN LEFT ARM	N. R.	CONFIRMED	N. R.	N. R.

CHART III

CASE NO.	YEAR	REPORTED BY		AGE FIRST NOTICED	REGION WHERE FIRST NOTICED	FAMILY HISTORY	BIOPSY REPORT	OF THE LESIONS										MUCOUS MEMBRANES	PURITUS
		DOCTOR	SEX					ABDOMEN	POBIC REGION	SACRAL REGION	PERINEUM	THIGHS	LEGS	FEET	SOLES				
85	1933	H.E. MICHELSON	J.C. FEMALE	17	8	PALMS	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SOME	N.R.		
86	1933	B.M. KESTEN	MALE	25	4-6	HAND + PALMS	NEGATIVE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	INGUINAL SOME	N.R.	N.R.	N.R.	N.R.		
87	1933	C.O. WEST	FEMALE	52	15	FACE	2 DAUGHTERS BELOW	N.R.	NO MENTION OF AREAS INVOLVED								N.R.		
88	1933	"	FEMALE	24	10	N.R.	ABOVE MOTHER + BELOW SISTER	N.R.	"	"	"	"	"	"	"	"	N.R.		
89	1933	"	FEMALE	22	11	N.R.	ABOVE MOTHER + SISTER	N.R.	"	"	"	"	"	"	"	"	N.R.		
90	1934	P. OLIVER + F.V. PLUMMER	FEMALE	30	15	BEHIND THE EARS	MOTHER + SISTER	CONFIRMED	N.R.	SOME	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	SOME		
91	1934	N.V. EPSTEIN	FEMALE	21	17	FOREHEAD	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
92	1934	G.A. MACHACEK + J. HOPKINS	MALE	20	14	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	NONE		
93	1934	M. EBERT FOR B.B. BEESON	MALE	44	44	N.R.	N.R.	CONFIRMED	N.R.	SOME	SOME	SOME	N.R.	N.R.	N.R.	N.R.	SLIGHT		
94	1934	T. NISBET	MALE	31	24	ABDOMEN	N.R.	N.R.	MENTION OF AREAS INVOLVED								N.R.		
95	1934	J.G. URUEÑA	FEMALE	73	13-14	N.R.	NEGATIVE	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SEVERE	SOME	SEVERE	N.R.		
96	1935	K. FROST	FEMALE	44	?	N.R.	N.R.	CONFIRMED	SOME	SOME	N.R.	SOME	N.R.	N.R.	N.R.	SOME	SOME		
97	1935	"	MALE	37	29	CAME ON AS A SADDEN REDNESS LEAVING SATIN AS NOW	NEGATIVE	CONFIRMED	SLIGHT	N.R.	SOME	N.R.	SOME	N.R.	N.R.	N.R.	N.R.		
98	1935	"	MALE	31	23	N.R.	NEGATIVE	CONFIRMED	SOME	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SLIGHT		
99	1935	S. SILVERS	FEMALE	17	SINCE BIRTH	UPPER PORTION OF CHEST	MOTHER + SISTER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SLIGHT		
100	1935	U. WILE + G.H. BEUTE	MALE	42	12	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	NONE		
101	1935	B.B. BEESON	MALE	25	24	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
102	1935	H. SILVERS	FEMALE	20	17	LEFT SIDE OF NECK	1 SISTER BELOW MOTHER + 2 SISTERS	CONFIRMED	N.R.	SOME	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.		
103	1935	"	FEMALE	52	N.R.	N.R.	ABOVE MOTHER + BELOW SISTER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
104	1935	"	FEMALE	18	N.R.	N.R.	ABOVE MOTHER + ABOVE SISTER	CONFIRMED	WHAT AREAS INVOLVED								N.R.		
105	1935	A.D. KING	MALE	34	28	UPPER BACK + CHEST	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SLIGHT		
106	1936	C.J. SHEPARD	MALE	46	30-31	ONE LEG	N.R.	CONFIRMED	SOME	N.R.	N.R.	N.R.	SOME	SOME	N.R.	SOME	FREE		
107	1936	M.B. PAROUNGIAN	MALE	27	19-20	SCALP	N.R.	CONFIRMED	SOME	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	SLIGHT		
108	1936	V.A.H. CORNELL	FEMALE	17	N.R.	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
109	1936	J.A. GAMMEL	N.R.	40	36	BACK	N.R.	CONFIRMED	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
110	1937	R. BREAKSTONE	MALE	22	4-6	BACK OF HANDS	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.		
111	1937	H. CHARACHE	MALE	45	33	SOLE OF RT. FOOT	NEGATIVE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	SEVERE	SEVERE	N.R.	N.R.	N.R.		
112	1937	C.J. WHITE	MALE	21	5	SCALP	N.R.	CONFIRMED	SOME	N.R.	N.R.	N.R.	SOME	SLIGHT	N.R.	N.R.	N.R.		
113	1937	S.E. SWEITZER	MALE	74	46	FACE	GRAND-FATHER + FATHER 1 SON 2 DAUGHTERS 3 MALE GRANDCHILDREN	CONFIRMED	N.R.	N.R.	SOME	N.R.	SOME	N.R.	N.R.	SOME	N.R.		
114	1937	S.E. SWEITZER + E.M. RUSTEN	MALE	32	26	WAIST - LINE	NEGATIVE	CONFIRMED	SOME	N.R.	N.R.	N.R.	SOME	FREE	FREE	FREE	N.R.		
115	1937	H.E. MICHELSON	FEMALE	20	13	NECK + SCALP	GRAND-MOTHER 3 MOTHER 3 SISTERS ALL INVOLVED 5 BROTHERS FREE	N.R.	N.R.	N.R.	N.R.	SOME	GRAIN SOME	N.R.	N.R.	N.R.	SLIGHT		
116	1937	"	FEMALE	21	7-8	PALMS + SOLES	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.		
117	1937	T. BUTTERWORTH	MALE	46	N.R.	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	SOME	N.R.		
118	1937	A. WALLER + LAPOWSKY	FEMALE	16	9	SHOULDERS	NEGATIVE	CONFIRMED	SOME	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	FREE	SLIGHT		
119	1937	P.E. BECHET	FEMALE	55	35-40	N.R.	NEGATIVE	CONFIRMED	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
120	1937	H.S. CAMPBELL	FEMALE	40	30	FINGERS + DORSUM HANDS	PATIENT'S SON AS BELOW	CONFIRMED	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.		
121	1937	"	MALE	63	6	PALMS + HANDS	ABOVE MOTHER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
122	1937	E.T. BEANSTEIN	MALE	47	4-7	ON HANDS	N.R.	CONFIRMED	SOME	N.R.	N.R.	N.R.	SOME	SOME	N.R.	N.R.	N.R.		

CASE NO.	YEAR	REPORTED BY	SEX	AGE	AGE FIRST NOTICED	REGION WHERE	FAMILY HISTORY	BIOPSY REPORT	OF THE LESIONS										MUCOUS MEMBRANES	PURITUS
		DOCTOR				FIRST NOTICED			ABDOMEN	POBIC REGION	SACRAL REGION	PERINEUM	THIGHS	LEGS	FEET	SOLES				
85	1933	H.E. MICHELSON	J.C. FEMALE	17	8	PALMS	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SOME	N.R.			
86	1933	B.M. KESTEN	MALE	25	4-6	HAND + PALMS	NEGATIVE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	INGUINAL SOME	N.R.	N.R.	N.R.	N.R.			
87	1933	C.O. WEST	FEMALE	52	15	FACE	2 DAUGHTERS BELOW	N.R.	NO MENTION OF AREAS INVOLVED										N.R.	
88	1933	"	FEMALE	24	10	N.R.	ABOVE MOTHER + BELOW SISTER	N.R.	"	"	"	"	"	"	"	"	"			
89	1933	"	FEMALE	22	11	N.R.	ABOVE MOTHER + SISTER	N.R.	"	"	"	"	"	"	"	"	"			
90	1934	P. OLIVER + E.V. PLUMMER	FEMALE	30	15	BEHIND THE EARS	MOTHER + SISTER	CONFIRMED	N.R.	SOME	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	SOME			
91	1934	N.V. EPSTEIN	E.V. FEMALE	21	17	FOREHEAD	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.			
92	1934	G.A. MACHACEK + J. HOPKINS	G.H. MALE	20	14	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	NONE			
93	1934	M. EBERT FOR B.B. BEESON	R.R. MALE	44	44	N.R.	N.R.	CONFIRMED	N.R.	SOME	SOME	SOME	N.R.	N.R.	N.R.	N.R.	SLIGHT			
94	1934	T. NISBET	R.R. MALE	31	24	ABDOMEN	N.R.	N.R.	MENTION OF AREAS INVOLVED										N.R.	
95	1934	J.G. URUEÑA	FEMALE	73	13-14	N.R.	NEGATIVE	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SEVERE	SOME	SEVERE	N.R.			
96	1935	K. FROST	FEMALE	44	?	N.R.	N.R.	CONFIRMED	SOME	SOME	N.R.	SOME	N.R.	N.R.	N.R.	SOME	SOME			
97	1935	"	S.O.H. MALE	37	29	CAME ON AS A SADDEN REDNESS LEAVING SATIN AS NOW	NEGATIVE	CONFIRMED	SLIGHT	N.R.	SOME	N.R.	SOME	N.R.	N.R.	N.R.	N.R.			
98	1935	"	MALE	31	23	N.R.	NEGATIVE	CONFIRMED	SOME	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SLIGHT			
99	1935	S. SILVERS	E.E.P. FEMALE	17	SINCE BIRTH	UPPER PORTION OF CHEST	MOTHER + SISTER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SLIGHT			
100	1935	U. WILE + G.H. BEUTE	MALE	42	12	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	NONE			
101	1935	B.B. BEESON	MALE	25	24	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.			
102	1935	H. SILVERS	J.V. FEMALE	20	17	LEFT SIDE OF NECK	1 SISTER BELOW MOTHER + 2 SISTERS	CONFIRMED	N.R.	SOME	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.			
103	1935	"	FEMALE	52	N.R.	N.R.	+ ONE OTHER SISTER ABOVE MOTHER + BELOW SISTER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.			
104	1935	"	FEMALE	18	N.R.	N.R.	ABOVE MOTHER + ABOVE SISTER	CONFIRMED	W H A T AREAS INVOLVED										N.R.	
105	1935	A.D. KING	MALE	34	28	UPPER BACK + CHEST	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	SLIGHT			
106	1936	C.J. SHEPARD	C.W. MALE	46	30-31	ONE LEG	N.R.	CONFIRMED	SOME	N.R.	N.R.	N.R.	SOME	SOME	N.R.	SOME	FREE			
107	1936	M.B. PAROUNGIAN	A.B. MALE	27	18-20	SCALP	N.R.	CONFIRMED	SOME	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	SLIGHT			
108	1936	V.A.H. CORNELL	G.L. FEMALE	17	N.R.	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.			
109	1936	J.A. GAMMEL	J.S. N.R.	40	36	BACK	N.R.	CONFIRMED	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.			
110	1937	R. BREAKSTONE	A.K. MALE	22	4-6	BACK OF HANDS	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.	N.R.			
111	1937	H. CHARACHE	E.W. NEGRO MALE	45	33	AFTER STEAMER ON BACK OF BLANK	NEGATIVE	CONFIRMED	N.R.	N.R.	N.R.	N.R.	SEVERE	SEVERE	N.R.	N.R.	N.R.			
112	1937	C.J. WHITE	R.W.G. MALE	21	5	SCALP	N.R.	CONFIRMED	SOME	N.R.	N.R.	N.R.	SOME	SLIGHT	N.R.	N.R.	N.R.			
113	1937	S.E. SWEITZER	J.D. MALE	74	46	FACE	CARD - FATHER + FATHER + SON 2 DAUGHTERS 3 MALE GRANDCHILDREN	CONFIRMED	N.R.	N.R.	SOME	N.R.	SOME	N.R.	N.R.	SOME	N.R.			
114	1937	S.E. SWEITZER + E.M. RUSTEN	J.G. MALE	32	26	WAIST - LINE	NEGATIVE	CONFIRMED	SOME	N.R.	N.R.	N.R.	SOME	FREE	FREE	FREE	N.R.			
115	1937	H.E. MICHELSON	T.J. FEMALE	20	13	NECK + SCALP	GRAND - MOTHER + MOTHER + 3 SISTERS ALL INVOLVED 3 BROTHERS FREE	N.R.	N.R.	N.R.	N.R.	SOME	GRAIN SOME	N.R.	N.R.	N.R.	SLIGHT			
116	1937	"	J.C. FEMALE	21	7-8	PALMS + SOLES	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.			
117	1937	T. BUTTERWORTH	W.H. MALE	46	N.R.	N.R.	N.R.	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	SOME	N.R.			
118	1937	A. WAZLER + LAPOWSKY	A.Z. FEMALE	16	9	SHOULDERS	NEGATIVE	CONFIRMED	SOME	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	FREE	SLIGHT			
119	1937	P.E. BECHET	R.D. FEMALE	55	35-40	N.R.	NEGATIVE	CONFIRMED	N.R.	N.R.	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.			
120	1937	H.S. CAMPBELL	FEMALE	40	30	FINGERS + DORSUM HANDS	PATIENT'S SON AS BELOW	CONFIRMED	SOME	N.R.	N.R.	N.R.	N.R.	N.R.	SOME	N.R.	N.R.			
121	1937	"	MALE	65	6	PALMS + HANDS	ABOVE MOTHER	CONFIRMED	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.			
122	1937	E.T. BEANSTEIN	C.D. MALE	47	4-7	ON HANDS	N.R.	CONFIRMED	SOME	N.R.	N.R.	N.R.	SOME	SOME	N.R.	N.R.	N.R.			

CASE NO.	YEAR	REPORTED BY	SEX	AGE	AGE FIRST NOTICED	REGION WHERE FIRST NOTICED	FAMILY HISTORY	BIOPSY REPORT	TREATMENT	RESULTS
		DOCTOR			NOTICED	NOTICED				
85	1933	H.E. MICHELSON	J.C. FEMALE	17	8	PALMS	N.R.	N.R.	.5 ERYTHEMA DOSE FILTERED X-RAY TO THUMB	TOO SOON TO BE READ
86	1933	B.M. KESTEN	MALE	25	4-6	HAND + PALMS	NEGATIVE	CONFIRMED	N.R.	N.R.
87	1933	C.O. WEST	FEMALE	52	15	FACE	2 DAUGHTERS BELOW	N.R.	N.R.	N.R.
88	1933	" "	FEMALE	24	10	N.R.	ABOVE MOTHER + BELOW SISTER	N.R.	N.R.	N.R.
89	1933	" "	FEMALE	22	11	N.R.	ABOVE MOTHER + SISTER	N.R.	N.R.	N.R.
90	1933	A. OLIVER + F.V. PLUMMER	FEMALE	30	15	BEHIND THE EARS	MOTHER + SISTER	CONFIRMED	N.R.	N.R.
91	1933	N.V. EPSTEIN	FEMALE	21	17	FOREHEAD	N.R.	CONFIRMED	N.R.	DISAPPEARED SPONTANEOUSLY 3 TIMES IN LAST 4 YRS.
92	1934	G.A. MACHACEK + J. HOPKINS	MALE	20	14	N.R.	N.R.	CONFIRMED	N.R.	N.R.
93	1934	M.H. EBERT FOR B.B. GLESSON	MALE	44	44	N.R.	N.R.	CONFIRMED	SEEN AGAIN IN 1935	LESIONS 1935 MUCH BETTER
94	1934	T. NISBET	F.R. MALE	31	24	ABDOMEN	N.R.	N.R.	MANY INJECTIONS NEOARSAPHENAMINE	NO RESULTS
95	1934	J.G. URUEÑA	R.R. FEMALE	73	13-14	AFTER CASE OF MARASMIUS N.R.	NEGATIVE	N.R.	RADIUM TO FOOT + SOLE WAS UNSCREENED	HYPERKERATOSIS DISAPPEARED PATIENT DIED OF RADIATION DERMATITIS
96	1935	K. FROST	FEMALE	44	?	N.R.	N.R.	CONFIRMED	N.R.	N.R.
97	1935	" "	S.O.H. MALE	37	29	CAME ON AS A SUDDEN REDNESS LEAVING SKIN AS NOW	NEGATIVE	CONFIRMED	N.R.	N.R.
98	1935	" "	MALE	31	23	N.R.	NEGATIVE	CONFIRMED	N.R.	N.R.
99	1935	S. SILVERS	E.F.F. FEMALE	17	BIRTH	SINCE BIRTH UPPER PORTION OF CHEST	MOTHER + SISTER	CONFIRMED	X-RAY ONE DOSE 75 ROENTGENS	NO ANY CAN BE READ AS YET
100	1935	U.J. WILE + G.H. BELUTE	MALE	42	12	N.R.	N.R.	CONFIRMED	N.R.	N.R.
101	1935	B.B. BEESON	MALE	25	24	N.R.	N.R.	N.R.	N.R.	N.R.
102	1935	M. SILVERS	J.V. FEMALE	20	17	LEFT SIDE OF NECK	1 SISTER BELOW MOTHER + 2 SISTERS + ONE OTHER SISTER	CONFIRMED	N.R.	N.R.
103	1935	" "	FEMALE	52	N.R.	N.R.	ABOVE MOTHER + BELOW SISTER	CONFIRMED	N.R.	N.R.
104	1935	" "	FEMALE	18	N.R.	N.R.	ABOVE MOTHER + ABOVE SISTER	CONFIRMED	N.R.	N.R.
105	1935	A.D. KING	MALE	34	28	UPPER BACK + CHEST	N.R.	CONFIRMED	X-RAY 1 FRACTIONAL DOSE	NO RESULTS AS YET
106	1936	C.J. SHEPARD	C.W.M. MALE	46	30-31	ONE LEG	N.A.	CONFIRMED	N.R.	N.R.
107	1936	M.B. PAROUNGIAN	A.B. MALE	27	18-20	SCALP	N.R.	CONFIRMED	3 YRS. AGO X-RAY TREATMENT BY ANOTHER M.D.	DISAPPEARED AFTER 5 MO. TO REAPPEAR 1 YR. LATER
108	1936	V.A.H. CORNELL	G.L. FEMALE	17	N.R.	N.R.	N.R.	CONFIRMED	2 SUPERFICIAL SHOTS OF X-RAY	TO EARLY FOR RESULTS TO BE READ
109	1936	J.A. GAMMEL	J.S. N.R.	40	36	BACK	N.R.	CONFIRMED	N.R.	N.R.
110	1937	R. BREAKSTONE	A.R. MALE	22	4-6	BACK OF HANDS AFTER STERILIZED ON BONE + BLAS	N.R.	CONFIRMED	X-RAY ON FOREHEAD	NO APPARENT RESULTS
111	1937	H. CHARACHE	E.V. NEGRO MALE	45	33	SOLE OF RT. FOOT	NEGATIVE	CONFIRMED	N.R.	DIED OF CARCINOMA OF RT. FOOT OVER OLD LESIONS
112	1937	C.J. WHITE	R.W.G. MALE	21	5	SCALP	N.R.	CONFIRMED	N.R.	N.R.
113	1937	S.E. SWETZTER	J.D. MALE	74	46	FACE	CANDIDATE + FATHER 1 SON 2 DAUGHTERS 3 MALE GRANDCHILDREN	CONFIRMED	N.R.	N.R.
114	1937	S.E. SWETZTER + E.M. RUSTEN	J.G. MALE	32	26	WAIST-LINE	NEGATIVE	CONFIRMED	N.R.	N.R.
115	1937	H.E. MICHELSON	T.J. FEMALE	20	13	NECK + SCALP	GRAND-MOTHER + MOTHER 3 SISTERS ALL INVOLVED 5 BROTHERS FREE	N.R.	N.R.	N.R.
116	1937	" "	J.C. FEMALE	21	7-8	PALMS + SOLES	N.R.	N.R.	N.R.	N.R.
117	1937	T. BUTTERWORTH	W.H. MALE	46	N.R.	N.R.	N.R.	CONFIRMED	N.R.	N.R.
118	1937	A. WALZER + L. POWSKI	A.Z. FEMALE	16	9	SHOULDERS	NEGATIVE	CONFIRMED	N.R.	N.R.
119	1937	P.E. BECHET	R.D. FEMALE	55	35-40	N.R.	NEGATIVE	CONFIRMED	N.R.	N.R.
120	1937	H.S. CAMPBELL	FEMALE	40	30	FINGERS + DORSUM HANDS	PATIENT'S SON AS BELOW	CONFIRMED	DR. F. KOETTER GAVE SODIUM IODIDE AND ALL CLEARED UP FOR 1 YR; NOW SODIUM CALCIUM + THYROID	SOME IMPROVEMENT
121	1937	" "	MALE	6 1/2	6	PALMS + HANDS	ABOVE MOTHER	CONFIRMED	N.R.	N.R.
122	1937	E.T. BEANSTEIN	C.D. MALE	47	4-7	ON HANDS	N.R.	CONFIRMED	N.R.	N.R.
123										

ABSTRACTS OF CHARTS

I believe the most important of the thesis is the abstraction of the chart in its separate phases.

There are 117 separate cases which are most of the cases reported from 1886 up to 1938.

The distribution in the two sexes varies only to a slight degree. Of these cases there were reported 61 males, 54 females, and 2 cases with no report as to sex.

The ages when the lesions are first noticed vary from birth as in many cases, up to the age of 69, as in the case of 49. The largest number of cases, however, occur before the age of 20. The age group is as follows;

Birth to and including age 1 are 7 cases.

Age 2 " " " " 3 " 4 " .

Age 4 " " " " 5 " 6 " .

Age 6 " " " " 10 " 15 " .

Age 10 " " " " 15 " 22 " .

Age 16 " " " " 20 " 14 " .

ABSTRACTS OF CHARTS (continued)

CONT. Age groupings when lesions are first noticed are as follows.

Age 21 to and including age 25	are 3 cases.
Age 26 " " " " 30 " 4 " .	
Age 31 " " " " 35 " 2 " .	
Age 36 " " " " 40 " 2 " .	
Age 41 " " " " 45 " 1 " .	
Age 46 " " " " 50 " 1 " .	
Age 50 " " " " 68 " 0 " .	
Age 69	1 " .
No age report	16 " .

The heredity trait seems to be an important factor in this skin disease, in that of these 117 cases reported, 37 cases give a positive family history. Of these there are 7 instances of 2 cases reported in their separate families. Also 2 instances of 3 cases reported in separate families. Therefore this takes in 20 of the 37 reported. There are several instances of the 37 cases in which there is a history of the disease being present in the second and third generations and one instance of a history being present in 5 generations, as in case of 52.

ABSTRACTS OF CHARTS (continued)

The review of the cases as to areas where first noticed shows that the greatest percentage of lesions make their appearance some where on the head or neck.

Lesions first appearing on the scalp, 7 cases.

"	"	"	"	"	face , 15 cases.
"	"	"	"	"	neck , 8 " .
"	"	"	"	"	back , 5 " .
"	"	"	"	"	chest, 5 " .
"	"	"	"	"	arms , 2 " .
"	"	"	"	"	back of, 8 " .
"	"	"	"	"	hands
"	"	"	"	"	hands &, 3 " .
"	"	"	"	"	palms
"	"	"	"	"	palms, 3 " .
"	"	"	"	"	abdomen, 4 " .
"	"	"	"	"	Axilla, 2 " .
"	"	"	"	"	soles , 1 " .
"	"	"	"	"	feet , 2 " .
"	"	"	"	"	legs , 2 " .
"	"	"	"	"	generalized, 2 cases.

Cases of which no area reported of first appearance, 48 cases.

ABSTRACTS OF CHARTS (continued)

Biopsys were confirmed in 70 cases. No biopsys were done in 5 cases and no reports in 42 cases.

The Doctors in most cases registered the positive findings in the distribution of the lesions and did not register in most cases the negative findings. Thus the reports of the distribution of lesions when down as no report may be considered to be negative.

The abstract of the distribution of the lesions over the various portions of the body give the following;

Scalp positive in 77 cases, negative in 40.

Face	"	" 75	" ,	"	" 42.
Neck	"	" 68	" ,	"	" 49.
On arms	"	" 48	" ,	"	" 69.
Back hands	"	" 40	" ,	"	" 77.
Palms	"	" 30	" ,	"	" 87.
Nails	"	" 16	" ,	"	" 101.
Chest	"	" 71	" ,	"	" 46.
Back	"	" 69	" ,	"	" 48.
Axilla	"	" 34	" ,	"	" 83.
Abdomen	"	" 44	" ,	"	" 73.
Pubic region	"	" 21	" ,	"	" 96.

THE CONT. OF ABSTRACT OF THE DISTRIBUTION OF THE LESIONS

Sacral region positive in 19 cases, negative in 98.

Perineum	"	"	21	"	,	"	"	96.
Thighs	"	"	30	"	,	"	"	87.
Legs	"	"	26	"	,	"	"	91.
Feet	"	"	10	"	,	"	"	107.
Soles	"	"	20	"	,	"	"	97.
Mucous Membrane	"	"	13	"	,	"	"	104

Pruritus or subjective symptoms in 21 cases with none in 96 cases.

TREATMENT, RESULTS AND ADDED INFORMATION

Case 10

In 1908 Dr. Wende reported a case in which many epitheliomas had made their appearance, superimposed upon the Keratosis follicularis lesions. At the age of thirty-two the patient noticed large fungating lesions appearing as enlargements of the Darier's lesions. At the age of thirty-seven biopsys were taken of three large lesions on the abdomen, one on the back, two above the rectum, one on the chest and one on the scrotum. The two above the rectum were rodent-ulcers, The rest were epitheliomas. These lesions were removed surgically and x-ray applied to the surrounding skin areas. The larger areas of Darier's were not benefited by the x-ray. ¹⁶

Case 21

Dr. Hans Ritter in 1912 gave x-ray treatments of two successive doses of 10 x Benoist Walter 5 over each area. He also used thermal cautery, but it was very painful, leaving scars and the lesions reappeared. An added portion of his report was that Dr. Herxheimer had excellent results with three cases with the use of Paquelin cautery. ²⁴

Case 30

The case of Dr. Scheer in which he used 1 unit in 4 divided doses gave excellent results as he reported

in 1936 the patient had a complete disappearance of the lesions and never reappearing. It was in 1936 he suggested x-ray was of great benefit on early lesions, but of little or no value on late cases. ³⁰

Case 31

Dr. Schalek made a great improvement in standardizing the dosage, as before there was no way of measuring the dosage with the old type x-ray, and the Collidge tube was a better means of standardization. He recommended exposures over the different areas of the body, first on alternate days then twice a week. The average dosage were rays registering 4 milliamperes through a 1 M. M. Aluminum filter, at an 8 inch distance, with a 5 inch spark gap for 5 minutes, representing about a 2 /3 Hampson erythema dose. With this treatment the patient showed improvement after three months. ³¹

Case 33

Dr. Wise and Parkhurst reported this old man of 78 years had a basal cell carcinoma at the bridge of the nose on the right. ³³

Case 34

Dr. Wise and Parkhurst had a female patient of a very obese type weight 175 pounds. It was thought there might be an endocrine disfunction but Dr. Trimme found

negative endocrine findings. Her treatment consisted of 1/4 H. unit doses of x-ray over chest and back and in axilla, once every two weeks. In six treatments there was a 75% improvement everywhere, except in axilla. Also had during the treatment a tenth grain of thyroid extract three times a day. ³³

Case 36 & 14

Dr. Fox reported this case had received from 1911 to 1921 numerous x-ray and radium treatments. Telangiectatic areas had been produced on the abdomen by unmeasured x-ray, but new lesions reappeared. Also telangiectasia had been produced on the neck by unscreened radium but again new lesions reappeared. In 1922 Dr. Fox felt that in such a case there could be no permanent results obtained. ³⁵

Case 37

Dr. Borghoff reported a case of baby. The lesions appearing at 21 months. Coming in to clinic at 27 months. Treated with x-ray with relief for 6 weeks. Then rapidly spread again and at 31 months showed all areas very severe, much pruritus, irritability and died at age of 32 months. ³⁶

Case 96

In 1934 Dr. J. G. Uruena reported a case in which the woman had been treated in 1927 with unscreened radium

over one foot and sole by another Doctor. The woman received a severe radium dermatitis and died in 1934 with malignancy involving the whole leg. 88

— CONCLUSION

Keratosis follicularis is a skin disease characterized by a dyskeratosis due to excessively proliferating prickles-cells.⁸⁹

The etiology is unknown, but many men think there is an endocrine, or nervous imbalance, or the combination of both. Heredity is an important factor in that many cases give a positive family history.

The lesions seem to appear about as often on females as on males. In the largest percentage of cases initial lesions appearing before twenty, but may appear from birth up to age sixty-nine. The biggest percentage of lesions make their appearance somewhere on the head or neck. The lesions after establishment gradually involve other areas. The areas of predilection in the large number of cases are the head, neck, chest, and back.

The treatment is to treat the early lesions as soon as possible with x-ray, as the long established cases do not respond as well as do the early lesions. However, hope is held out now with the use of the Ultra-Roentgen ray treatment.

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