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ICHTHYOL

Its Use in
Skin Diseases
and in
Minor Surgery

MEYER & CO.
New York

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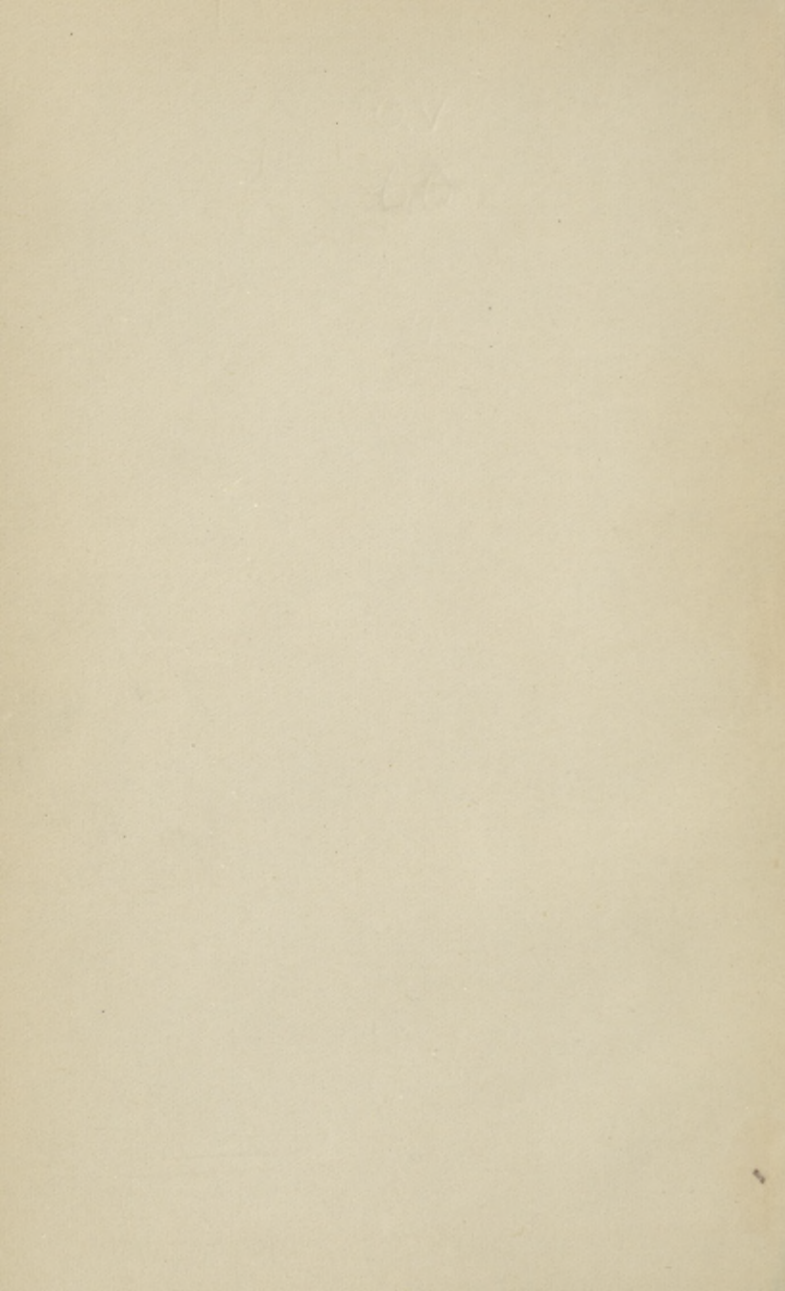
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MERCK & CO.

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Montreal

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St. Louis

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Ichthyol

In Skin Diseases and in Minor Surgery

In this little volume we have brought together in brief and convenient form the most recent information from authoritative sources regarding the use of Ichthyol in the treatment of skin diseases and in minor surgery. It will be noted in the selection of references that they have been drawn not from the older literature but almost entirely from medical journals and standard text books of current date. The text has been prepared with the view of presenting this information in a form which will be of most service to the physician in his practice.

With the kind permission of the publishers, we have included a classification of skin diseases as recommended by Dr. Henry W. Stelwagon⁵³ which appears in the recently revised edition of his work, "Diseases of the Skin," 1923. The text was most ably completed and brought to its present admirable form by Dr. Henry K. Gaskill. In explanation of the classification Dr. Stelwagon wrote: "The system here adopted for this purpose is Hebra's system, which, I believe, with its modifications by Crocker, of placing, for more convenient reference, the diseases of the appendages in one class, and with the further slight modifications by Morrow, still constitutes, in spite of its inconsistencies, the most practical one." It will be noted that in the text the arrangement given in the classification has been followed.

To avoid the creation of a false impression it should here be stated that although the entire classification is given there

is no intention to imply that Ichthyol is applicable in all of the diseases enumerated in the classification. In the text itself only those diseases have been included on which most recent data from authoritative sources are available. Thus out of the 230 diseases listed in the classification we have referred to the use of Ichthyol in only 48. It is quite evident that Ichthyol could not be equally effective in all the conditions noted. In some cases Ichthyol alone is sufficient to effect an improvement; in other cases it may serve merely to alleviate one of the distressing symptoms.

Although this volume has been limited to the use of Ichthyol in some diseases of the skin and in minor surgery, the remedy is also used in other fields of medicine. In gynecology physicians have found it valuable, many having reported its satisfactory use in such conditions as vaginitis, salpingitis, ovaritis, metritis, cervicitis, and other conditions of pelvic congestion and inflammation. In minor surgery and in the treatment of wounds Ichthyol also finds application. Although a number of the surgical conditions are discussed in the chapter on Dermatology, others could not conveniently be included, and we have therefore appended a chapter on Wounds and Minor Surgery in which a brief survey of the subject is given.

Classification of Skin Diseases

according to

HENRY W. STELWAGON

CLASS I—HYPEREMIAS

Erythema	ERYTHEMA INTERTRIGO
ERYTHEMA HYPERÆMICUM	Erythema Scarlatinoides

CLASS II—INFLAMMATIONS

ERYTHEMA MULTIFORME	DERMATITIS HERPETIFORMIS
ERYTHEMA NODOSUM	PEMPHIGUS
ERYTHEMA INDURATUM	Dermatitis Vegetans
Granuloma Annulare	Epidermolysis Bullosa
Pellagra	Dermatitis Repens
URTICARIA	The Impetigos
URTICARIA PIGMENTOSA	Impetigo Contagiosa
Cedema Angioneuroticum	ECTHYMA
PITYRIASIS ROSEA	Dermatitis Cupuliformis or
DERMATITIS EXFOLIATIVA	Tropical Ecthyma
DERMATITIS EXFOLIATIVA EPIDEM-	Impetigo Herpetiformis
ICA	FURUNCULUS
DERMATITIS EXFOLIATIVA NEONA-	CARBUNCULUS
TORUM	Phlegmona Diffusa
PRURIGO	Dissection Wounds
Prurigo Nodularis	Postmortem Pustule
LICHEN PLANUS	Equinia
The Chronic Resistant Macular	Anthrax Maligna
and Maculopapular Scaly	Erysipelas
Erythrodermias	ERYSIPELOID
LICHEN SCROFULOSUS	Sphaceloderma
Pityriasis Rubra Pilaris	DERMATITIS GANGRÆNOSA INFAN-
PSORIASIS	TUM
ECZEMA	Multiple Gangrene of the Skin
REGIONAL AND INFANTILE ECZEMA	in Adults
DERMATITIS SEBORRHÆICA	Diabetic Gangrene
Keratolysis Exfoliativa	Symmetric Gangrene
HERPES SIMPLEX	DERMATITIS CALORICA
HERPES ZOSTER	DERMATITIS AMBUSTIONIS
Hydroa Vacciniforme	DERMATITIS CONGELATIONIS
Pompholyx	DERMATITIS TRAUMATICA

CLASS II—INFLAMMATIONS (*Continued*)

DERMATITIS VENENATA	The Exanthemata
Match-box Dermatitis	Scarlatina
Occupation Dermatoses	Rubeola-Measles
X-Ray Dermatitis	Rubella
Dermatitis Factitia	Varicella
DERMATITIS MEDICAMENTOSA	Variola
	Vaccinal Eruptions

CLASS III—HEMORRHAGES

Purpura

CLASS IV—HYPERTROPHIES

Lentigo	Cornu Cutaneum
Chloasma	ICHTHYOSIS
Naevus Pigmentosus	Erythrodermia Congenitale
Acanthosis Nigricans	Ichthyosiforme
CLAVUS	Porokeratosis
Callositas	Angiokeratoma
KERATOSIS PALMARIS ET PLANTARIS	Scleroderma
Keratosis Blenorrhagica	Sclerema Neonatorum
Keratosis Senilis	Œdema Neonatorum
Keratosis Pilaris	Elephantiasis
Keratosis Follicularis	Myxedema
Verruca	Dermatolysis

CLASS V—ATROPHIES

Albinismus	Diffuse Idiopathic Atrophy of the
Vitiligo	Skin
Glossy Skin	Kraurosis Vulvae
Atrophia Senilis	Ainhum
Striae et Maculae Atrophicae	Perforating Ulcer of the Foot
	Morvan's Disease

CLASS VI—NEW GROWTHS

Cicatrix	Endothelioma
KELOID	Adenoma Sebaceum
DERMATITIS PAPILLARIS CAPIL- LITII	Adenoma of the Sweat-gland
Molluscum Contagiosum	Lymphangioma
Multiple Benign Cystic Epithe- lioma	Lymphangioma Circumscriptum
	Multiple Benign, Tumor-like New Growths

CLASS VI—NEW GROWTHS (*Continued*)

Xanthoma	Palmar and Plantar
Xanthoma Diabeticorum	Syphiloderm
Colloid Degeneration of the Skin	Moist Papule
Naevus Vasculosus	Vesicular Syphiloderm
Telangiectasis	Pustular Syphiloderm
Angioma Serpiginosum	Bullous Syphiloderm
Progressive Pigmentary Dermatitis	Tubercular Syphiloderm
Granuloma Pyogenicum	Gummatous Syphiloderm
Fibroma	Of Tongue
Paraffinoma	Cutaneous Manifestations of Hereditary Syphilis
Lipoma	Oriental Sore
Myoma	Dermal Leishmaniasis
Neuroma	Espundia
Rhinoscleroma	Frambesia
TUBERCULOSIS CUTIS	Gangosa
TUBERCULOSIS ULCEROSA	Verruga Peruana
TUBERCULOSIS VERRUCOSA	Tropical Ulcers
SCROFULODERMA	Carcinoma Cutis
LUPUS VULGARIS	Paget's Disease
Tuberculids	Epithelioma
LUPUS ERYTHEMATOSUS	Xeroderma Pigmentosum
Syphilis	Sarcoma Cutis
Cutaneous Manifestations of Acquired Syphilis	Multiple Benign Sarcoid
Macular Syphiloderm	Granuloma Fungoides
Pigmentary Syphiloderm	Leukemia Cutis; Pseudoleukemia Cutis
Papular Syphiloderm	Lepra

CLASS VII—NEUROSES

Hyperesthesia	PRURITUS
Dermatalgia	Anesthesia
Erythromelalgia	

CLASS VIII—DISEASES OF THE APPENDAGES

1. Diseases of the Nails

ONYCHAUXIS	Onychomycosis
Atrophia Unguium	

CLASS VIII—DISEASES OF THE APPENDAGES (*Continued*)

2. Diseases of the Hair and the Hair-Follicles

Hypertrichosis	Leptothrix
Atrophia Pilorum Propria	Canities
Fragilitas Crinium	ALOPECIA
Trichorrhexis Nodosa	ALOPECIA AREATA
Monilethrix	Folliculitis Decalvans
Piedra	Ulerythema Ophryogenes
Tinea Nodosa	SYCOSIS VULGARIS

3. Diseases of the Sebaceous Glands

Seborrhea	Folliculitis Ulerythematosa Reticulata
Asteatosis	ACNE
Milium	Acne Varioliformis
Steatoma	Acrodermatitis Hiemalis
Comedo	ACNE ROSACEA

4. Diseases of the Sweat-Glands

HYPERIDROSIS	Uridrosis
Anidrosis	Sudamen
Bromidrosis	Hydrocystoma
Chromidrosis	Granulosis Rubra Nasi
Hematidrosis	Miliaria

CLASS IX—PARASITIC AFFECTIONS

A. Diseases Due to Vegetable Parasites

Favus	Pinta Disease
Ringworm	Myringomycosis
RINGWORM OF THE GENERAL SURFACE	Actinomycosis
Ringworm of the Scalp	Mycetoma
RINGWORM OF THE BEARDED REGION	Blastomycosis
Tinea Imbricata	Coccidioidal Granuloma-Dermatitis Coccidioides
Tinea Versicolor	Sporotrichosis
Erythrasma	Amebiasis Cutis

B. Diseases Due to Animal Parasites

Pediculosis	Scabies
Pediculosis Capitis	Other Animal Parasites, of
Pediculosis Corporis	Minor Importance, Pene-
Pediculosis Pubis	trating the Skin.
Other Animal Parasites, of	
Minor Importance, Attack-	
ing the Skin	

Note: The diseases described in the following pages are indicated in the foregoing classification by the use of capital letters.

PRIMARY AND SECONDARY LESIONS OF THE SKIN *

Eight Primary Lesions

Macules.—Macules are variously sized, shaped and colored spots on the skin without elevation or depression.

Papules.—Papules are pin-head to pea-sized, circumscribed, solid elevations. These lesions are variously colored and their tops may be flat, depressed or dome shaped.

Tubercles.—Tubercles are pea-sized or larger, solid elevations that may be also relatively deep-seated and persistent.

Tumors.—Tumors are cherry-sized or larger, solid elevations that may also involve the deeper structures of the skin or subcutaneous tissue.

Vesicles.—Vesicles are pin-point to pea-sized, variously shaped and colored elevations that contain a clear or turbid fluid. They may be dome-shaped or flat on top.

Bullae.—Bullae are pea-sized or larger elevations containing fluid. The tenseness or flaccidity and consequently the shape of the top depend upon the amount of fluid contained within their walls.

* According to J. Harper Blaisdell, *Urologic and Cutaneous Review*, 28: 212, Apr. '24.

Pustules.—Pustules are pin-point or larger elevations containing pus.

Wheals.—Wheals are variously sized and shaped, transitory or more durable elevations that are due to an infiltration of serum.

Seven Secondary Lesions

Scales.—Scales are dry exfoliations of the horny layer of the skin.

Crusts.—Crusts are dry or moist exudations, the color, shape and thickness depending upon the nature and abundance of the secretion and upon the amount of the added epithelial débris.

Excoriations.—Excoriations are traumatic in origin and vary much in size, shape and depth.

Fissures.—Fissures are linear cracks of varying depths in natural furrows of the skin.

Ulcerations.—Ulcerations are variously shaped and sized losses of the cutaneous, or sub-cutaneous tissues.

Scars.—Scars are new formations of connective tissue which replace previous tissue losses involving the corium or deeper structures.

Pigmentation.—Pigmentation is the permanent or temporary deposition of coloring matter on or below the surface of the skin.

CLASS I—HYPEREMIAS

The hyperemias include those erythemata which are of a non-inflammatory or non-exudative character.

Erythema Hyperaemicum

Synonyms: Erythema simplex; Erythema congestivum.

Occurs in non-elevated reddish or pinkish patches of various sizes and shapes. There is no infiltration, the skin is hot and there is usually mild itching. External agencies are responsible for the cryptogenic class, while the symptomatic class have their origin internally. In either case the redness disappears upon pressure and reappears as soon as the pressure is released.

Treatment consists in attention to diet, fractional doses of calomel and the local application of lotions. Frederick Gardiner,¹⁹ Physician for Diseases of the Skin, Royal Infirmary, Edinburgh, writes, "Ichthyol in 10 per cent solution in water or made up with vaseline and kept constantly on the parts at night, will also give great relief, and has the advantage that it may be used when the skin is broken."

Wallace Beatty,⁴ Honorary Professor of Dermatology, Trinity College, Dublin, recommends that Boeck's paint be applied at bedtime. The formula for this is as follows:

℞	Ichthyolis	3 j
	Resorcinolis	3 j
	Acidi Tannici	3 j
	Aquae	3 v

This dries on quickly and forms a varnish which may be dusted over with talcum powder.

A 25 to 30 per cent ointment or solution of Ichthyol, as a stimulating remedy after the disorder has assumed a chronic stage, is suggested by Richard L. Sutton,⁵⁷ Professor of Skin Diseases, University of Kansas School of Medicine, and Former Chairman of the Dermatological Section of the American Medical Association.

Henry W. Stelwagon,⁵⁸ late Professor of Dermatology in the Jefferson Medical College, states that "Ichthyol is to be recommended as a lotion, diluted with 2 or 3 parts of water, or as an ointment of 25 per cent strength."

Erythema Intertrigo

Synonyms: Chafing, Intertrigo.

Irritation of the skin due to chafing, resulting in redness and burning of the parts with possible abrasion. Usually there is no elevation or infiltration. Due to perspiration and resulting moisture a maceration of epidermis and mucoid discharge may develop.

The differentiation between erythema intertrigo and eczema is one of degree only, with the possibility of the condition developing into a true eczema if not attended to. In acute cases, where the surface is inflamed, and the epidermis moist and sore, it is best to apply a weak solution of silver nitrate. Where the oozing is red but slightly moist, a weak solution of Ichthyol may be used, as in the following prescription:

R	Ichthyolis	3j
	Resorcinolis	grn xv
	Aquae	fl ℥ iij

Applications are best made with a wad of absorbent cotton.

The patient should be cautioned to keep the affected parts clean. The cause is to be removed if possible, preventing the friction with a layer of absorbent cotton which must be changed frequently. The application of dusting

powders and of lotions such as are used in the acute type of eczema will also be found of value. Ointments are of advantage where it is difficult to prevent the rubbing of the surfaces as the layer of grease will afford some protection.

Mackenna³⁹ writes, "When it has developed, the erythema may be treated with calamine lotion and Ichthyol.

℞ Calaminae Lotio . . . fl ʒ j
Ichthyolis grn ij

Other formulas which may be used are:

℞ Ichthyolis ʒ j
Magnesii Carbonatis . . .
Zinci Oxidi āā ʒ v

and

℞ Ichthyolis ʒ ij
Alcoholis
Aetheris āā ʒ ijss

Apply on cotton wool, and bandage."

CLASS II—INFLAMMATIONS

A diseased condition of any tissue of the body with redness, swelling, heat, and pain.

Erythema Multiforme

Synonym: Erythema exsudativum multiforme.

Inflamed lesions usually appearing on the legs, forearms, face or neck, scattered or in groups, of various sizes and shapes and of an acute character. The lesions occur as macules, papules or tubercles which may become vesicular or bullous. They are of a reddish or purplish red color.

As the condition is usually attributed to intestinal toxins, internal treatment is of paramount importance. Cleaning out the intestinal tract and the use of Magnesium Superoxol (Magnesium Peroxide 25%) is often sufficient to effect a cure.

Quinine and the salicylates are also of benefit. A useful combination is that known as Quinisal, which is a definite chemical combination of quinine and salicylo-salicylic acid.

The external applications, although probably contributing to the shortening of the disease, are mainly for the alleviation of the intense irritative symptoms. For the external treatment Beatty⁴ recommends Ichthyol, either pure or 25 per cent in water, painted on the lesions.

For the relief of the itching and burning, antipruritic agents are of service. MacKenna³⁹ writes, "The burning and itching are greatly relieved by the use of calamine lotion to each ounce of which grn. 2 of Ichthyol may be added."

Shaw⁵² writes, "Local measures when there are subjective symptoms are helpful. Generally all that is needed is the application of a soothing powder such as zinc oxide and starch or equal parts of boric acid and starch. Ichthyol dolomol powder is excellent."

Gardiner¹⁹ recommends treatment with a slightly higher percentage of Ichthyol. He states: "Locally, borocalamine lotion, or with 2½ per cent of Ichthyol added, frequently applied, will be found to be soothing." For obstinate cases he recommends that "10 per cent of Ichthyol in vaseline or in paste, be applied on spreads of cotton or linen, and worn constantly."

Erythema Nodosum

Synonym: Dermatitis contusiformis.

Usually appears as erythematous nodes or swellings of pea to egg size, rounded and elevated on the tibial surfaces. Acute. Systemic disturbances usually accompany or precede, and are manifested by malaise, rheumatic pains and swellings of the joints.

For the internal treatment, besides a plain diet, laxative, rest, etc., Duhring speaks favorably of the use of sodium salicylate and quinine. Quinisol (quinine bisalicylosalicylate) is suitable for such medication.

To soothe the tender and painful lesions, the external application of 3 to 10 per cent Ichthyol ointments is recommended by Stelwagon.⁵³ He states, "The rheumatic swellings and pains often about the joints will also require at times similar soothing applications; the parts may also be enveloped with cotton batting."

Pusey⁷² writes, "Jamieson advises painting the nodes with flexible collodion, to which might well be added ten per cent. of Ichthyol."

Gardiner¹⁹ writes, "Recovery will be hastened by Ichthyol lotion or Ichthyol ointment applied to the parts."

MacKenna,³⁹ states, "For local application I believe strongly in an Ichthyol paint.

℞ Ichthyolis ʒ iv
Aque ʒ iv

Sig. To be painted on to each lesion with a soft brush night and morning and allowed to dry."

Blaisdell⁴⁸ recommends a 50 per cent. aqueous solution of Ichthyol applied to the parts during the day and an ointment of 1 dram Ichthyol to the ounce applied at night.

Frank C. Knowles,³³ Professor of Dermatology, Jefferson Medical College, writes, "The most important part of the treatment consists of rest of the affected parts and local applications. Fomentations of a saturated solution of boric acid work admirably. The following lotion, frequently applied, has been found most useful:

℞	Ichthyolis	ʒ ij
	Acidi Borici	ʒ j
	Zinci Oxidi	ʒ ij
	Glycerini	m xl
	Aquae q. s. ad	f ʒ iv"

According to Shaw,⁵² "Menthol, Ichthyol or carbolic acid ointment applied to the nodules often relieves the pain.

Hartzell²⁴ states, "Locally lead water and laudanum should be applied on gauze or a mixture of Ichthyol in water, one part of the former to three of the latter may be applied with a camel's hair brush twice or three times a day."

Erythema Induratum

Synonyms: Erythema induratum scrofulosorum; Erythème induré des scrofuleux (Bazin); Bazin's disease.

Appears most often in cachectic and strumous girls and young women between the ages of 12 and 30 as purplish, subcutaneous, indolent, gumma-like nodules which enlarge to variable size, tending to undergo necrosis with formation of sluggish ulcers. Of a chronic nature usually appearing on the legs. Not common.

The treatment recommended by Stelwagon⁵³ is as follows: "An ointment of resorcin, 5 to 10 per cent strength, made up with Lassar's paste, is a useful application. The

plan I have found most satisfactory when the patients cannot give the time to absolute or even relative rest is to wash daily the ulcers and also the general leg surface with a saturated solution of boric acid containing 3 to 10 grains (0.2-0.65 Gm.) of resorcin to the ounce (32 Gm.), dressing the ulcers with a powder of boric acid or with the foregoing paste, and putting on a roller-bandage. As soon as a clean condition of the ulcers is established and they are looking less active, which usually ensues in from ten days to a few weeks, this treatment, provided the ulcers are not numerous, is somewhat changed; the preliminary washing of the entire leg is the same, but the ulcers are sprayed with hydrogen dioxide, and then a gelatin dressing of zinc oxide and Ichthyol is put on leaving a window over each ulcer."

Gelatin	2 parts
Zinc Oxide	1 part
Glycerin	3 parts
Water	4 to 6 parts
Ichthyol	2 per cent.

"The gelatin dressing is renewed every three or four days."

Ichthyol treatment is also prescribed by Gardiner¹⁹ who states that "Rest in bed, the use of elastic bandages, and the application of strappings are all very valuable; 10 per cent of Ichthyol in ointment or paste is probably the most useful of applications."

Urticaria

Synonyms: Hives; Nettlerash.

An inflammatory skin disease with an eruption of wheals varying in size and shape, and accompanied by itching and stinging. The lesions are of evanescent nature usually not lasting for more than a few hours. A customary peculiarity is the production of wheals upon drawing the finger over the skin. There are many causes but in most cases an in-

dividual predisposition exists such as idiosyncrasy to a particular food, e.g. strawberries, cucumbers, sausage, fish, etc.

For relief of the intense itching and burning local treatment is necessary. P. Scharff,⁵¹ writing on "Urticaria Symptomatica Infantilis," states that an experience of 17 years has taught him to rely on Ichthyol, the remedy never having failed him. He uses a simple 5 to 10 per cent aqueous solution of Ichthyol with 5 per cent of glycerin added to prevent the tension which the skin ordinarily exhibits when aqueous liquids are applied. Where it is desired to have the Ichthyol in an available form for a long period, the author used the following formula:

Ichthyol	1 part
Lanum	2 parts
Petrolatum	4 parts
Distilled water	3 parts

A 5 per cent Ichthyol ointment applied on spreads is advocated by Gardiner.¹⁹

Norman Walker,⁶² Physician for Diseases of the Skin, The Royal Infirmary, Edinburgh, states, "Ichthyol possesses powers far beyond the sulphur which it contains. In urticaria it is probably our most dependable drug, and in any case where the vessel nerve relations are disordered, it may be hopefully given."

The local application of one of the following is recommended by Highman,²⁰ "Calamine or calamine and zinc lotion with one per cent. of phenol or menthol, or five per cent. of Ichthyol, applied several times a day, or mentholated powders made with zinc stearate, zinc oxide, bismuth or talcum often give immediate and permanent relief."

Urticaria Pigmentosa

Synonyms: Xanthelasmaidea; Urticaria perstans pigmentosa.

At onset is not readily distinguished from urticaria. The urticaria-like lesions are persistent, however, and usually

present pigment deposits after a short time. The lesions may be scanty or profuse and vary as to form, being usually macular, nodular, or tuberoso. Itching is usually present.

This disorder is not common, and appears almost exclusively in infants, and is practically identical with urticaria except that the lesions become pigmented.

If external treatment is desirable to relieve the itching, the same applications as given for urticaria will be found helpful.

Œdema Angioneuroticum or Giant Urticaria, which usually appears on the eyelids, lips, and other tissues which are more or less easily distensible, is also amenable to treatment by the methods and with the remedies used in urticaria.

Pityriasis Rosea

Synonyms: Pityriasis maculata et circinata (Bazin); Herpes tonsurans maculosus (Hebra).

Raised scaly efflorescences of a light red hue and variously sized. Usually making its initial appearance on the trunk and upper portion of the extremities in discrete, confluent, plain or circinate form of pinkish color and with a slightly scaly fawn-colored center.

The etiology is not definitely known, but the condition is surmised to be caused by a toxic or parasitic factor. External treatment is often helpful in shortening the course of the disease. Ichthyol, 2 per cent in a cream or a glycerol, is mentioned by Darier as an application which "visibly hastens the fading of the lesions." An ordinary soap-and-water bath should precede the application daily, or preferably an alkaline bath, should the scaliness be very abundant.

Stelwagon⁵³ states that a saline laxative may be occasionally prescribed along with, if in any way indicated, such tonics as quinine, strychnine, and iron.

The condition usually terminates more or less spontaneously after running its course of three to six weeks.

Dermatitis Exfoliativa

Synonyms: Pityriasis rubra; General exfoliative dermatitis; Acute general dermatitis; Fr., Dermatite exfoliatrice; Erythrodermie exfoliante (Bosnier).

A generalized, occasionally limited, acute or subacute inflammatory disease characterized by redness and abundant flaky desquamation. The onset is often localized in the genitocrural region and other flexures. It spreads rapidly, however, soon covering the greater part of the entire surface.

The local treatment is described by Highman²⁶ as follows: "During such periods as the wet fomentations are interrupted, as at night, or in the intervals following the magnesium sulphate or witch hazel dressings, the skin is to be coated with a soothing shaking lotion of which the following are types:

℞	Calaminae Pulv.	
	Zinci Oxidi	ãã 10
	Alcoholis	50
	Aquae Rosae	ad 200
℞	Zinci Oxidi	
	Calaminae Pulv.	ãã 10
	Alcoholis	50
	Aquae Rosae	20
	Liq. Calcis	ad 200

A lotion of this sort must be thoroughly shaken up, poured into the hollowed palm of the attendant and splashed on the affected surface where it dries. It leaves a powdery coating, which should not be removed save that it is wise to cleanse the skin once in twenty-four hours with olive oil. In doing so, however, no great force should be employed and only such crusts and coatings of dried lotion should be removed as come off easily. Burnt heavy magnesia may be substituted for the calamine, and it is somewhat more soothing. Ichthyol in a concentration of from five to ten per cent.

may also be included in the formula. This substance tends to constrict the vessels and thus diminish the congestion. Of the two formulas given the second is more astringent and the first more soothing. Thus the second is preferable in the more vesicular and erythematous types of lesions, but its use must be restricted as it may dry the skin excessively and make it too brittle. At the onset of the disease it is often found beneficial to paint the skin with equal parts of Ichthyol and water."

Dermatitis Exfoliativa Epidemica

Synonyms: Epidemic skin disease; Epidemic eczema; Dermatitis epidemica; Savill's disease.

A dermatitis exfoliativa which sometimes has an eczematous nature. Bright red erythematous patches or papules accompanied by itching generally appear on several regions. Vesiculation and some infiltration may occur. Scales of various size are rapidly formed in large quantities. Its epidemic nature is its main point of variance from dermatitis exfoliativa. Most common in those of advanced age.

Mild applications similar to those indicated in acute eczema are useful. Sutton⁵⁷ writes: "Locally, soothing oily applications, to which a small percentage of ammoniated mercury or Ichthyol (0.5 to 1 per cent) has been added, are indicated."

Soothing lotions of this nature are useful to give comfort to the patients but it has not been shown that they materially assist in shortening the course of the infection. Painting over with tincture of iodine or collodion has occasionally been reported to abort the disease when it began in small areas.

Harrison²³ writes, "Starch poultices are also valuable, and, in places where there is much pustulation, Ichthyol ointment (10 per cent.) works well."

Dermatitis Exfoliativa Neonatorum

Synonyms: Ritter's disease; Dermatitis exfoliativa infantum; Keratolysis neonatorum.

Appears in the newborn and nursing infants, and has a close resemblance to dermatitis exfoliativa. There is a growing tendency to classify the disease under impetigo contagiosa due to a belief that it is the same as pemphigus neonatorum.

The loss of body heat, and marasmus, are factors which tend to keep the mortality high. As stated by Stelwagon,⁵³ "Treatment consists in sustaining the strength of the patient by appropriate means, the character of the nourishment receiving special attention. The maintenance of the body heat is likewise of essential importance. For this and other purposes fats or oils should be freely used externally, medicated with 0.5 to 1 per cent of boric acid or Ichthyol, and the patient wrapped in cotton wadding."

Lenier³⁶ describes a condition which he terms erythrodermia desquamativa. This evidently differs from Ritter's disease, but resembles a generalized eczema seborrhoeicum. The cases described by Lenier occurred in breast fed infants.

J. Strandberg,⁵⁵ discussing the treatment of erythrodermia desquamativa (Lenier), states that he used boric acid salve with 2 per cent salicylic acid added, and also with the addition of Ichthyol, 2 to 5 per cent.

Prurigo

Synonyms: Strophulus prurigineux; Prurigo ferox; Prurigo agria; Prurigo mitis; Juckblättern.

An inflammatory disease characterized by the occurrence of discrete, slightly raised, pale red papules chiefly on extensor surfaces, and intense itching. Papules vary from pin-head to small pea-size. Most marked on the lower half

of the extremities. May be preceded by urticaria papulosa.

In this disease, which is comparatively rare, attention to diet and hygienic conditions is usually indicated. External treatment is also of importance. Alkaline, tar, or hot plain baths, followed by a soothing application, will usually afford relief and comfort. Acute cases are said to be incurable as to permanent relief. MacKenna³⁹ states that "Great comfort is afforded by a daily hot bath, in which the patient may lie for an hour at a time." After gently drying, the skin is to be thoroughly smeared with some mild ointment with a basis of animal fats. The formula suggested by the author is:

℞	Liq. Carbonis Detergentis	m xv
	Ichthyolis	grn x
	Lanolini	ʒ ij
	Adipis Benzoati	ad ʒ i

Lichen Planus

Synonyms: Lichen ruber planus; Lichen psoriasis.

An inflammatory disease characterized by the occurrence of pin-head or slightly larger papules with a tendency to coalesce. The papules are of a glistening dull red or purplish color, at first discrete and often exhibiting a slight central depression. The flexure surface of the legs, ankles, forearms, and wrists are the favorite locations although other parts may be affected. The course is slow, insidious, chronic.

A general run-down condition is usually concomitant, for which reason tonics, especially one containing arsenic such as Fowler's Solution or Arsenoferratose, are indicated. Other remedies for internal use which are of value are mercury, salicin, quinine, and the salicylates.

For the alleviation of the itching and to hasten the absorption of the lesions, external treatment is of importance. In acute irritable cases mild preparations are indicated. In less acute cases stimulating remedies may be

employed such as solution of coal tar or oil of cade. In certain cases cure can only be effected by exposure to the roentgen rays.

The following is a useful lotion:

℞ Bismuthi Subnitrat̄is	
Zinci Oxidi	āā ʒ ij
Ichthyolis	f ʒ ij
Aquae Rosae	ad f ʒ vj

Pusey ⁷² writes, "In Hyde's case fifty per cent. aqueous solution of Ichthyol was slowly successful after salicylic acid had failed."

Sutton ⁵⁷ states that "In cases of long standing and particularly in those involving the scalp, Fordyce speaks highly of the application of a 25 per cent aqueous solution of potassium hydroxide followed by curettage, and the liberal use of an Ichthyol ointment."

Lichen Scrofulosus

Synonym: Lichen scrofulosorum.

A mildly inflammatory disease characterized by small round or flat papules having a red or yellow tint. Lesions at first are isolated but later extend to form oval or crescentic patches. The lesions become capped by minute scales. The older papules undergo involution, flatten down, taking on crescentic or segmental outline. Chronic. Ordinarily limited to the trunk.

This disease which generally occurs in tuberculous patients responds readily to treatment. Cod-liver oil internally and inunction with a suitable external application are usually effective. For the external treatment MacKenna ⁸⁹ writes, "Locally a weak salicylic ointment or an ointment containing 1 per cent to 2 per cent of Ichthyol may be used." If not treated the condition may persist for an indefinite period.

Psoriasis

Synonyms: Lepra; Lepra alphas; Schuppenflechte.

A dry, chronic, inflammatory disease characterized by well defined reddish, roundish, sharply margined, scaly, papular patches, varying in size and covered with thick, abundant, imbricated, silvery-white scales. They begin as pin-head sized papules and enlarge into slightly elevated and thickened or infiltrated patches by peripheral extension. The face, palms and soles are rarely involved.

Internally arsenic, potassium iodide, salicin and the salicylates are useful. In most cases external treatment is essential. Even in mild cases where internal treatment would probably be sufficient the course of the disease may be materially shortened by local applications. Plain or alkaline baths, according to the severity of the attack, are indicated for the removal of the scales. In acute cases MacKenna³⁹ advises as follows. "Great relief may be derived from a daily tepid bath containing one-half ounce of Liquor Carbonis Detergens in every twelve gallons. The patient may take a bath of this kind daily, and lie in it from 15 to 20 minutes. On coming out the skin should be dried gently and anointed with the following suspension of calamine:

℞ Ichthyolis	grn iij
Calaminae Prep.	grn xv
Pulv. Zinci Oxidi	grn xv
Ol. Olivæ	℥ ss
.Aq. Calcis	ad ℥ j

Haldin Davis,¹⁰ Dermatologist to the Royal Free Hospital and Lecturer on Diseases of the Skin to the London School of Medicine for Women, recommends the following:

℞ Ichthyolis	℥ ss
Acidi Salicylici	grn x
Ung. Petrolei	ad ℥ j

For treating the scalp in chronic cases MacKenna³⁹ prefers the following ointment:

℞	Sapon. Mollis Virid.	. . .	℥ ss
	Acidi Salicylici	. . . .	grn xx
	Ichthyolis	. . . .	grn v
	Paraffin. Mollis	. . . .	℥ ss

Sig. To be rubbed into the scalp every night, and followed by a shampoo with spirit soap lotion in the morning.

In many cases the papules make their initial appearance at the extensor surfaces of the elbows and knees, and as is very often the case remain localized at these parts for months. For the external treatment of the limbs Beatty⁴ states: "Remove scales with hot water and *sapo viridis*. Rub in (limiting the rubbing as far as possible to the lesions) with a piece of flannel,

COMPOUND CHRYSAROBIN OINTMENT

℞	Chrysarobini	. . . . .	5
	Acidi Salicylici	. . . . .	2
	Ichthyolis	. . . . .	5
	Vasellini	. . . . .	88

"Use a little ointment for each lesion and rub in dry. A second piece of flannel is useful for this.

"This treatment is carried out once or twice daily."

Eczema

Synonyms: Tetter; Salt rheum; Nässende Flechte; Salzfluss.

A non-contagious catarrhal inflammation of the epidermis, sometimes acute but more often chronic, char-

acterized by itching and scaling of the skin and a serous exudation upon the denuded surfaces (excepting the erythematous form in which no exudate occurs).

The six cardinal symptoms are

C crusting or scaling.	} In every case there will be four or five of these symptoms.
R redness.	
I itching.	
M moisture (serous exudation).	
I infiltration (swelling).	
C cracking of the skin.	

The lesions may be simple erythema, papules, vesicles, pustules, squamous, or a combination of these. Beginning with one form, secondary forms may develop at any time. No matter what kind of lesion or lesions are found, they usually coalesce in time, forming ill-defined infiltrated patches.

Eczema is one of the most frequently occurring of cutaneous diseases. It does not confine itself to any one beginning, nor does it limit itself to any particular part of the body.

The scaliness and crusting should be removed first. In acute cases where soap is usually contraindicated this is accomplished by olive oil. In acute or actively inflammatory cases of any variety Stelwagon⁵³ prefers Ichthyol, in lotion form, from 1 to 4 drams to the pint. Darier⁹ advises Ichthyol with a small addition of resorcin or yellow oxide of mercury pastes, as an addition to the use of lotions after the affected surface is clean and the inflammation has subsided.

Morris⁴² states that Ichthyol is useful in acute forms of eczema for its sedative effect. He writes, "In a large number of cases Ichthyol in water (1 in 16 to commence with) painted over the inflamed area, or in an ointment, will allay irritation, cause contraction of the cutaneous blood vessels, and lessen the discharge."

In the subacute or moderately inflammatory type Stelwagon⁶³ advises as follows: "The gelatin applications (Pick, Unna, Morrow, and others) are most admirable and constitute a valuable method of treating many cases of the disease, more particularly when upon the lower extremities." Of these applications he lays particular stress upon one which he calls the soft preparation "(and that which I have used most frequently), gelatin, 2 parts; zinc oxide, 1 part; glycerin, 3 parts; water, 4 to 6 parts, and to this preparation is added 2 per cent of Ichthyol, 1 per cent of carbolic acid, or 2 to 4 per cent of salicylic acid. That containing zinc oxide and Ichthyol is most serviceable."

W. Anderson³ writes: "The pustular type is secondary to one of the primary types, usually the vesicular, which is infected by scratching, but on the body it may be secondary to scabies which has become irritated by treatment and scratching. The infection should be cleared up by the use of boric acid compresses and the use of a two to five per cent ointment of ammoniated mercury with an equal amount of Ichthyol. After the infection has disappeared the treatment should be changed to correspond to the type of lesion remaining.

After the subsidence of the acute stage of the vesicular and erythematous types, you will find the skin dry and scaly, with a slight thickening; this forms the so-called squamous type. At this point Lassar's paste, with the addition of three to five per cent Ichthyol, will prove satisfactory."

Regional and Infantile Eczema

Eczema of the nails (eczema unguium): Ichthyol in the form of an ointment is, according to MacKenna³⁹ one of the best remedies. The nail involvement or changes are usually due to eczema of the periungual region.

Eczema of the Nipples and Breast (Eczema mammae):

"I have found painting with a dram to the ounce solution of Ichthyol in water successful; before nursing this is to be removed with a lotion containing boric acid and glycerin."
—Schamberg.⁵⁰

Montgomery⁴¹ and Culver write, "The patient under consideration had both nipples affected with a heavily crusted, impetiginous eczema covered with thick, yellow, brittle crusts. This was refractory to many forms of treatment usually successful in eczema until we finally painted it with equal parts of Ichthyol and water, under which it cleared up admirably."

Of two cases of uncomplicated and limited streptoderma of the nipple the authors write, "Treatment with Ichthyol, boric acid soakings, and other methods adapted to this diagnosis, secured an apparent cure in both cases."

Eczema of the Vulva: "When all the swelling has subsided, and the redness and itching are settling down, an ointment of Ichthyol and zinc (grn.v - $\frac{5}{8}$ i) may be applied."—MacKenna.³⁹

Jellett³¹ writes, "All causes which tend to produce or to keep up irritation must be removed. For this purpose, vaginal douches may be administered in cases of vaginal discharge, and pathological conditions of the uterus or vagina should be cured. With the same object, tampons soaked in a ten per cent. solution of Ichthyol in glycerin may be introduced into the vagina and removed after twenty-four hours. At the same time a lotion containing carbolic acid (two or three per cent.) or Ichthyol (two drams to the ounce) may be applied to the affected area with the double object of sterilizing the skin and affording relief from the intense irritation which the eczema causes, or any of the numerous remedies adopted in eczema of other parts, may be used instead."

Eczema of the Hands and Feet (*Eczema manuum* and *Eczema pedum*): "All bullae or pustules should be opened, the parts immersed for 15 to 20 minutes in a warm boric bath, and then dressed with boric lotion. This should be re-

peated night and morning. As the swelling subsides, the boric lotion dressings may be replaced by calamine compresses. Later, weak tar baths, i dr. of Liquor Carbonis Detergens in two pints of water, may be used, followed by the application of dressings of Lassar's paste, with grn. 5 of Ichthyol to the ounce. As restitution proceeds, the tar baths may be gradually strengthened, but they should never exceed $\bar{3}$ i to $\bar{3}$ x in strength, and the paste may be replaced by this ointment:

℞ Ichthyolis grn iii
 Ung. Acidi Salicylici $\bar{3}$ ss
 Ung. Zinci Oxidi $\bar{3}$ ss"

—MacKenna ²⁹

Eczema of the Face in Infants: "If the face is crusted, or hot and swollen, apply starch and boric poultices, keeping them in place with a light knitted mask. Change these frequently. When the swelling, redness, and oozing have subsided, apply calamine compresses, and at a later stage either Lassar's paste or zinc ointment, with grn. ii of Ichthyol added to each ounce."

If the patch is scaly, or if it has been reduced by treatment from the oedematous stage to a scaly one, one may use this ointment,

℞ Acidi Salicylici grn v
 Ichthyolis grn ij
 Ung. Zinci Oxidi
 Ung. Aquae Rosae āā $\bar{3}$ ss"

—MacKenna ²⁹

For the external treatment of infantile eczema Beatty ⁴ gives the formula:

℞ Ichthyolis grn x
 Zinci Oxidi $\bar{3}$ ij
 Pulv. Amyli $\bar{3}$ ij
 Vaselini $\bar{3}$ j

Follicular Eczema (subacute folliculitides): "Treatment with sulphur baths, sulphur or Ichthyol salves, is very promptly effective in the acute form; it must be more energetic or more prolonged in the sluggish varieties."—J. Darier.⁹

Dermatitis Seborrhoeica

Synonyms: Eczema seborrhoicum; Seborrhœa corporis; Seborrhoea sicca (some cases); Pityriasis capitis.

A moderate inflammatory condition characterized by greasy scaliness. Usually first appears on scalp and then extends downward. There is no marked infiltration and relatively moderate itching. Lesions are marginate, often segmental or irregular outline. Scales are grayish and greasy to the touch.

First remove scales or crusts, advises Darier,⁹ and then, "Directly afterward, or simultaneously, local agents are employed, salves, plasters and especially compound pastes, whose active substances are selected from the reducing agents; arsenic-zinc-sulphur paste or if this be thought too irritant, Ichthyol paste, or glycerol preparations with Ichthyol may be employed." Other useful remedies are sulphur, salicylic acid and resorcin. Due to its staining properties caution should be exercised in the use of resorcin in patients with gray or blond hair.

Beatty⁴ designates the following as a useful paste:

℞ Ichthyolis	grn x-lx
Pulv. Amyli	ʒ ij
Zinci Oxidi	ʒ ij
Petrolati (vaselini)	j

Morris⁴² writes, "In seborrhoeic eczema Ichthyol is best applied in the form of the varnish recommended by Unna, the composition of which is as follows: Ichthyol 40 parts,

starch 40 parts, albumin 1 to 1½ parts, water to 100 parts. Or the albumin may be omitted and the proportion of the other ingredients modified as follows. Ichthyol 25 parts, carbolic acid 2½ parts, starch 50 parts, water 22½ parts."

Herpes Simplex

Synonyms: Herpes; Fever blisters; Bläschenflechte.

An acute inflammatory condition often preceded by burning in the part, and represented by groups of small-sized (pin-head) vesicles usually with an inflamed hyperemic base. Vesicles do not spontaneously rupture, but when broken crusts form. Occurs most frequently on the face or genitalia. At times there is a proneness to recurrence and this usually on the same spot.

The application of spirit of camphor, cologne water, a lotion of zinc sulphate from 1 to 5 grains to the ounce of water, will cause the lesions to disappear. Where there is tendency to fissure about the mouth, hold mouth open wide and paint with benzoin tincture.

In the treatment of herpes proiesitalis cleanliness is of first importance. Dusting powders are useful. A layer of lint or cotton should be placed over the part. MacKenna³⁹ states: "When the attack occurs, the pain and burning, always most distressing in women, may be relieved by warm moist applications or by the application of Ichthyol, grn. ii in f. ʒ i of calamine lotion."

Herpes Zoster

Synonyms: Zona; Zoster; Shingles; Ignis sacer; Feuergürtel; Gürtelausschlag.

Characterized by groups of vesicles on areas which are elevated and inflamed. It is a self-limited disease, with neuralgic pain often preceding the eruption. Eruptions are unilateral, following the distribution of a nerve trunk, usually the intercostal, varying however in its extensiveness.

In very mild cases there is usually no treatment necessary. In more severe cases, internal medication is directed to invigorating the nervous system. Remedies useful are zinc phosphide, quinine, arsenic, Quinoferratoze, etc. For the external application J. F. Schamberg⁵⁰ states, "An excellent method is to paint the affected areas, when not too extensive and when not occupying flexures, with collodion containing Ichthyol:

℞ Ichthyolis f ʒj
 Collodii f ʒj

Similarly, MacKenna³⁹ advises, "Locally the vesicles may be dressed with a mild antiseptic dusting powder (grn. x Acid. Salicyl. in $\frac{3}{4}$ i of starch powder) and covered with a light dressing, or they may be painted over with flexile collodion, or with liquid gutta-percha, to which 1 per cent Ichthyol may be added." Pisko,⁴⁶ referring to herpes zoster, writes in part: "Here we have another acute inflammatory process which follows one or more of the cutaneous nerves. Vesicles appear in groups. The eruption being unilateral, usually appearing over the intercostal nerve. The eruption is accompanied by neuralgic pain. I use for treatment ice cold packing for four or five days, then paint with a fifty per cent Ichthyol solution."

Hartzell²⁴ writes, "Ichthyol in water, twenty to thirty per cent, may be applied twice a day with a camel's hair brush. This, when dry, forms a thin brown varnish protecting the eruption."

DERMATITIS HERPETIFORMIS

Synonyms: Hydroa bulleux (Bazin); Hydroa Herpetiforme (Fox); Duhring's disease; Dermatitis multiformis (Piffard); Herpes gestationis; Pemphigus pruriginosus; Herpes circinatus bullosus (Wilson); Pemphigus

circinatus (Rayer); Pemphigus pruriginoux (Hardy); Pemphigus composé (Devergie); Dermatite polymorphe; Dermatite herpetiforme (Brocq.).

A persistent chronic inflammatory disease with intense itching and burning and accompanied by an erythematous, papular, vesicular, pustular, bullous or mixed eruption which however is never ulcerative. A tendency towards grouping is characteristic as is also slight or marked pigmentation. The onset is often preceded by symptoms of general disturbance, as malaise, chilliness, flushing, temperature, etc. In some cases a new outbreak develops while the first is in development to be followed by other outbreaks in rapid succession.

For external treatment, antipruritic agents give the greatest relief. As valuable in this respect Stelwagon⁵⁸ mentions Ichthyol in an aqueous lotion in from 2 to 10 per cent. in strength. Schamberg⁵⁰ and W. MacKenna³⁹ also refer to Ichthyol lotions for local treatment. "External application of 1 per cent. ammoniated mercury ointment or 2 per cent. Ichthyol paste are the best," is the conclusion of Gardiner.¹⁹

Sibley⁷⁸ writes, "A 2 to 10 per cent. aqueous solution of Ichthyol, resorcin 1 to 5 per cent. in lotion, or carbolic acid 1 in 50 to 1 in 30 are all useful applications."

Morris⁴² writes, "Weak Ichthyol ointment or solution is of value as a local application."

The following lotion rubbed in several times daily is often useful:

℞ Ichthyolis	f ʒ j
Ol. Amygdalae Expr.	f ʒ j
Liq. Calcis	f ʒ j

Emulsify the oil with lime water and then add the Ichthyol.

Pemphigus

Synonyms: Blasenausschlag; Blister fever.

A chronic disease (rarely acute) characterized by repeated crops of large, rounded, watery vesicles (bullae). Blebs are clear but may become milky, opaque, or hemorrhagic. Eruptions arise suddenly with symptoms of malaise, fever, chilliness and other evidence of systemic disturbance. There is a tenderness, burning, and occasionally intense itching. Pemphigus Vulgaris is the most common variety. Prognosis of acute cases, cases involving mucous membranes, and septic cases following wounds, is always grave.

Constitutional treatment includes the use of arsenic, strychnine, quinine, iron, Arsenoferratose, cod-liver oil, etc. Externally, soothing lotions are grateful as are drying powders such as borated talc. Regarding Pemphigus vulgaris MacKenna³⁹ writes: "A disease possessing considerable resemblance to Pemphigus acutus except that it is attended by less general disturbance of health, runs a more chronic course, and tends to relapse and relapse again after intervals of complete or partial disappearance of all lesions." For the treatment of these lesions soothing external applications have been found beneficial. Lotions such as employed in acute eczema may be used. In the local treatment the author advises that "The blisters may be punctured with a sterile needle and then dressed with a dusting powder, or a lotion of calamine and Ichthyol, grn. v to $\frac{3}{4}$ i, or with Lassar's paste."

Ecthyma

An eruption of discrete, slightly elevated, finger-nail sized, flat, hard based pustules with a line of inflammation around each. The color at first is yellowish but becomes brown or reddish. The legs, forearms, shoulders and upper back are the areas usually affected.

In ecthyma, as in most pustular dermatoses of the extremities, Ichthyol applied locally in the form of wet dressings in 5 to 10 per cent solution will be found very useful in removing the dried crusts and healing the superficial resulting ulcerations.

For the local treatment of ecthyma René Lautembacher³⁴ recommends the use of Ichthyol as follows: "The local treatment consists in the application of bandages moistened first with a 5 per cent, later with a 10 per cent, Ichthyol solution, the bandages being made to cover the entire inflamed zone. The bandages are then covered with a layer of cotton, which in turn is covered with a layer of waxed paper (not waxed paper first and then cotton, as this may give rise to a troublesome maceration of the skin); the whole is then fastened down with a linen or gauze bandage. Under this treatment the bandages being renewed every day, but only by the physician, the inflammation and lymphangitic processes decline, and the pustules dry. Later on, when the diffuse inflammation has disappeared and only the ecthymatous ulcerations remain, bandages wet with the 10 per cent Ichthyol solution are continued, and zinc ointment is applied to the entire skin surrounding the ulcerations. Care must also be taken to observe whether any new pustules form, and if they do, to destroy them by the application of the thermo-cautery or with the point of a scarifier, as it frequently happens that ecthyma is not cured because the patients reinfect themselves by scratching the efflorescences. As soon as the ulcerations have been thoroughly cleansed, their cicatrization is effected by the application of suitable remedies such as dermatol, etc."

J. F. Schamberg⁵⁰ states, "The local treatment consists of the removal of the crusts and the application of an ointment, such as the following:

℞ Ichthyolis . . . m xxx-f 3 j
 Hydrarg. Ammoniat. . grn xx
 Ung. Zinci Oxidi . . . ʒ j"
 M. f. ung.

Furunculus

Synonyms: Furuncle; Boil; Blutschwär, Furoncle.

Painful, deep-seated, inflamed acuminated, firm nodules, containing a central slough, commonly termed a "core." Usually terminates in central suppuration and necrosis.

Attention to diet and the use of tonics is often useful. Purified extract of yeast or a pure dried culture of yeast internally is reported to be helpful. In the local treatment absolute cleanliness is essential including the use of antiseptic lotions. Stelwagon⁵³ states: "An ointment or aqueous solution of Ichthyol, 25 per cent strength, kept constantly applied, will succeed sometimes; it forms a good method of treatment of the lesions; when pointing has ensued, an incision and expression of the contents and its reapplication will hasten the final disappearance."

Knowles³³ states as follows: "Individuals who are subject to furuncles should start treatment with the slightest sign of a red infiltrated, slightly painful spot. There is no better preparation to abort these lesions than a 25 per cent Ichthyol ointment. In order to get the desired result the preparation has to be thoroughly and continuously rubbed into the lesion for not less than five minutes, and ten is even better, twice daily night and morning. In the meantime the beginning boil is either dressed with this same preparation or covered with Ichthyol plaster. This treatment is of use in every case up to the stage of suppuration, when free incision and drainage are indicated."

Sibley⁷³ writes that "Ichthyol, in an ointment or the aqueous solution of 25 per cent strength, is a good local application."

Ichthyol Plaster is preferred by Henry R. Wharton.⁶⁴ He states as follows: "This plaster is prepared by incorporating Ichthyol and the ordinary rubber plaster, it is much less irritating to the skin, and possesses the same adhesive

properties and is used for the same purposes as the resin or zinc oxide plasters."

A. A. Stevens⁵⁴ writes: "The lesions may sometimes be aborted by an application of mercury and Ichthyol:

℞ Ichthyolis grn xx
 Ext. Belladonnae . . . grn xxx
 Unguenti Hydrargyri . . . ʒ iss

Sig. Apply locally and make pressure with strips of adhesive plaster."

Carbunculus

Synonyms: Carbuncle; Anthrax simplex; Anthrax benigna; Brandschwär; Kohlenbeule.

An acute painful inflammatory disease accompanied by large circumscribed, flattened, phlegmonous pustules about egg-size terminating in suppuration which usually finds exit at several points. If on face or involving a large area constitutional disturbance may be severe.

The etiology of furunculus and carbunculus is essentially the same. The diagnostic difference is, while furunculus presents an acuminated appearance carbunculus is flat usually with numerous points of necrosis. Stelwagon⁵⁵ advises as follows: "Abortive treatment, by keeping the surface soaked in a strong antiseptic solution, usually 5 to 10 per cent carbolic acid lotion, may exceptionally, in the very beginning, when the formation begins superficially, prove successful; likewise the application of Ichthyol, pure or with 2 or 3 parts of water. Mild cases and even severe cases are often successfully treated, as first advocated by Verneuil, by free injection of carbolic acid in glycerin or oil, 10 per cent strength, at several or more points in the lesion; over this can be placed a thick covering of a 25 per cent ointment of Ichthyol, using equal parts of lanolin and zinc oxide ointment or spermaceti as a base. When the growth has broken down at a number of points, the pus and detritus

may be partially drawn out by means of a cupping-glass, and the carbolized oil or glycerin injected into the cavities thus made, and over this the same dressing as above; or the cavities or openings can with advantage be first thoroughly washed out with hydrogen dioxide. The slough usually comes away in the course of several days or a week or so, and healing rapidly ensues." The author also states that "In rapidly sloughing cases thorough cureting and the superimposing of an antiseptic dressing are advisable; Ichthyol also serves well for this purpose."

Knowles³³ also writes: "Exceptionally, in the very beginning the carbuncle can be aborted by keeping the surface soaked in a 5 to 10 per cent carbolic acid solution or a 50 per cent solution of Ichthyol."

Erysipeloid

Synonyms: Erythema migrans; Erythema serpens.

Almost always appears on the fingers and hands as it is contracted by those who handle spoiled fish or meat. Appears as a dull red or purplish spot slightly elevated which has a tendency to spread, though slowly. Accompanied by itching and burning. No desquamation.

"The disease tends to spontaneous disappearance in from one to several weeks, but its course may be influenced by treatment, which is usually rapidly successful, as the nature of the affection would indicate. Treatment consists of antiseptic dressings, of which those employed in erysipelas are the most satisfactory, especially the Ichthyol applications."—Stelwagon.⁵³

Schamberg⁵⁰ mentions, "I have used with good results a 25 per cent Ichthyol ointment."

Knowles³³ also advises the use of Ichthyol as follows: "Treatment hastens the cure although there is a tendency to spontaneous disappearance after weeks. The parts should be kept either constantly moistened with a lotion containing

℞ Ichthyolis	ʒ jss
Acidi Borici	ʒ xlv
Zinci Oxidi Pulv.	ʒ jss
Aquae Calcis	f ʒ iij

or an ointment composed of,

℞ Ichthyolis	ʒ ss-j
Bismuthi Subcarbonatis	ʒ ij
Petrolati	ʒ v

applied three or four times daily."

Hartzell²⁴ states, "The disease is a self limited one, disappearing spontaneously after two or three weeks. Its course may be shortened materially by appropriate local treatment. A twenty-five per cent. ointment of Ichthyol or an aqueous solution of the same strength, applied two or three times a day, is one of the most useful applications."

Dermatitis Gangraenosa Infantum

Synonyms: Varicella gangraenosa; Pemphigus gangraenosis; Multiple cachectic gangrene; Infantile gangrenous ecthyma; Rupia excharotica.

A gangrenous eruption observed in children or infants, often following other vesicular or pustular eruptions. The vesicles do not dry up but become crusted centrally with a pustular border and are surrounded by an inflammatory areola. Ulcerations develop beneath the crust.

The disease is of rare occurrence and the etiology has not been definitely established. Inasmuch as the disease is doubtless infective, Stelwagon⁵⁸ states that its local management is to be of an antiseptic character. He recommends a 5 to 10 per cent Ichthyol ointment or lotion, a saturated solution of boric acid with 2 or 3 grains of resorcin to the ounce, or washing with a corrosive sublimate solution, about 1:2000.

Dermatitis Calorica

Synonyms: Burns; Dermatitis ambustionis; Frost-bites; Dermatitis congelationis; Pernio.

Inflammation of the skin due to excessive heat (dermatitis ambustionis), or the numbing or destruction of the tissue due to excessive cold (dermatitis congelationis).

Suarez⁵⁶ (see abstract in the J. A. M. A., 69: 1479, '17) has used for about ten years a 10 or 15 per cent. Ichthyolized petrolatum in the treatment of burns. He refers particularly to its analgesic and healing power and to the fact that dressings do not stick to the tissues.

Schamberg⁵⁰ uses the following formula for the treatment of burns:

℞ Ichthyolis	℥ j
Petrolati	℥ j

For burns and scalds W. B. Campbell⁶⁰ recommends the following:

℞ Ext. Opii	grn vii ss
Ichthyolis	f ℥ iv
Liq. Petrolati	f ℥ vj
Lanum	℥ vj

M. Sig. Apply locally on gauze in burns of first degree.

℞ Ichthyolis	m xlvi
Olei Olivæ	f ℥ ij
Lanum	℥ iij

M. Sig. Apply locally to burns of third degree.

For the treatment of frost-bites (dermatitis congelationis) Ichthyol has been long and widely used.

Oakley Hermance²⁵ states, "During the very cold weather, the house staff of the Polyclinic Hospital, of Philadelphia, had an opportunity to test the different remedial

measures that have been proposed for the relief of frost-bite. Of the different methods employed, the application of Ichthyol ointment (33 1/3 per cent) seems to have given the best results. It almost instantly gave relief from pain, and promptly subdued the inflammation. Eight of the eleven cases treated therewith were discharged cured after placing a second dressing of Ichthyol, so rapid was its action.

K. Zingler⁶⁷ used Ichthyol in frost-bites because of its vaso-constrictor and analgesic properties. He found the following ointment most suitable for use:

℞ Ichthyolis	3 gm.
Resorcinolis	3 gm.
Petrolati	15 gm.
Lanum	15 gm.

The ointment was spread on thickly, and covered with a linen bandage for 24 hours. The results were prompt.

Stelwagon⁵³ recommends weak ointments of salicylic acid, from 10 to 20 grains to the ounce of zinc ointment, or one with 5 to 10 per cent Ichthyol, which will usually be all that is required.

Vaughan and Burnham⁶¹ write, "Glycerin, either alone or in combination with boric acid or tincture of iodine, is of value. Other remedies are Ichthyol ointment (10 to 20 per cent) salicylic acid ointment (2 to 5 per cent), and balsam of Peru. Applications should be made twice daily."

Oliver T. Osborne⁴⁴ writes that Ichthyol "is still considered a valuable application for sprains, and swollen joints, for frost bites, chillblains, and for burns. It is well used in 25 per cent ointment, or solution in either water or oil."

Beatty,⁴ Walker⁶² and others recommend the use of Boecks paint as follows:

℞ Ichthyolis	3 j
Resorcinolis	3 j
Tannini	3 j
Aquae	3 v

This paint dries on quickly. Talc powder may be dusted over.

Campbell ⁶⁹ recommends the following ointment for chilblains:

℞ Ichthyolis	f 3 ij
Ung. Potassii Iodidi . . .	3 iv
Olei Terebinthinae . . .	f 3 j
Adipis Lanae Hyd. q.s. ad	3 ij

M. Sig. Spread upon new unbleached muslin and apply.

Morris ⁴² writes that for chilblains, "Friar's balsam and camphorated spirit are excellent remedies; so, too, is Ichthyol." Referring to frostbite he states, "Ichthyol, owing to its influence on hyperemia and circulatory anomalies generally, is of great service; it may be used locally, a 10 per cent. ointment being rubbed into the affected part. Massage and galvanism are valuable adjuncts to the treatment."

Leftwich ³⁵ writes, "For broken chilblains unguentum picis may suffice, but Ichthyol 3 drams to 2 ounces of wool fat, is better."

Knowles ³³ recommends the following lotion and ointment:

℞ Ichthyolis	3 ss-j
Zinci Oxidi	3 ss
Liq. Calcis	f 3 j

℞ Ichthyolis	3 ss
Bismuth Subcarb.	3 ij
Petrolati	3 vj

Dermatitis Traumatica

Inflammations caused by traumatic agencies; continued scratching, bandages, abrasions, etc.

The cause should naturally be eliminated. For the local treatment the application of soothing lotions or ointments is indicated. For bed sores Stelwagon ⁵³ makes an applica-

tion of equal parts of soap plaster and petrolatum with the addition of 1 to 5 per cent of Ichthyol to the ounce. Knowles also recommends $\frac{1}{2}$ dr. of Ichthyol for the treatment of bed sores.

Dermatitis Venenata

Inflammations due to contact with external irritants as caustics, drugs, hair dyes, poisonous plants, etc.

The symptoms vary greatly and their intensity ranges from simple irritation to actual gangrenous action. Papulation, vesiculation, erysipelatous and edematous swellings may occur. Most cases are acute.

Treatment consists in removing the cause followed by the use of mild, soothing and slightly astringent applications.

J. B. McNair,⁴⁰ referring to the experiments of von Adelung, in which he sought to determine the most effective chemical "neutralizer" for use in rhus dermatitis writes: "Experiment 27: Ichthyol Collodion:—The worse of two patches of dermatitis three days old, was painted with a 5 per cent Ichthyol collodion daily. In twenty-four hours, distinct improvement was noted in the treated patch, and this patch recovered earlier. This was confirmed in treating hospital cases."

Dermatitis Medicamentosa

Synonyms: Medicinal eruptions; Drug eruptions.

Applied to disturbances resulting from the ingestion or absorption of drugs. The symptoms may resemble those of any of the erythematous, exudative and inflammatory diseases. The eruptions, however, are likely to make their appearance suddenly.

In the treatment withdrawal of the offending drug is, of course, the first step, to be followed by soothing applications, the internal administration of alkaline diuretics and

free drinking of water. In very severe cases supportive treatment may be required.

Ravogli ⁴⁹ writes, "In the cases of arsenical keratosis the omission of any arsenical preparation is necessary; the internal administration of small doses of calomel has been found useful. Externally the application of unguentum diachylon of Hebra with Ichthyol (1 to 10) has gradually brought the skin to normal."

For the treatment of serum rash, MacKenna ³⁹ states: "If an eruption breaks out apply local sedatives, oily calamine lotion with Ichthyol (grn. v- $\bar{3}$ i)."

Stelwagon ⁵³ states that a medicinal eruption may usually be treated externally in the same way as the eruption it simulates. Carbuncular and anthracoid lesions, however, do not as a rule require operative interference. In eruptions due to iodides or bromides he states that the coadministration of Fowler's solution, potassium bitartrate, and the maintenance of intestinal antisepsis seem to have an inhibitory action especially when the eruptions are pustular in form.

Drug idiosyncrasy appears to be more common in women and children and in persons in a poor state of health or of neurotic temperament. In some instances, as with quinine idiosyncrasy the reaction may be most severe, the patient developing an erythematous scarlatinoid eruption with itching and exudation followed by desquamation.

CLASS IV—HYPERTROPHIES

The increase in size of a tissue or organ independent of the general growth of the body.

Keratosis Palmaris et Plantaris

Synonyms: Tylosis palmaris et plantarum; Ichthyosis palmaris et plantaris; Keratoma; Keratoma palmare et plantare haereditarium; Symmetric keratoderma.

A symmetric hypertrophy of the corneous layer of the palms and soles, usually of a horny and plate-like nature. Usually congenital or hereditary.

Although permanent relief cannot be obtained, treatment may do much to keep the malady in abeyance. External applications are often helpful. Stelwagon⁵³ states that the most valuable are those in which salicylic acid is the active constituent. Also that in a few instances frequently repeated short exposures to the Roentgen rays have been followed by a disappearance of the thickening. Knowles³³ advises that the thickened areas be excised with a knife or burned off with the actual cautery.

The erythema keratodes of Brooke's is seemingly allied to this condition and according to Brooke and Morris⁴² is favorably influenced by the constant application of an ointment containing Ichthyol and salicylic acid.

Ichthyosis

Synonyms: Fish-skin disease; Xeroderma; Xeroderma ichthyosis; Ichthyosis vera; Ichthyosis congenita; Sauriasis; Fischeschuppenausschlag.

A chronic disease in which the skin becomes dry, hard, and rough with plate-like scaliness, follicular enlargement and occasionally with warty growths. The hair and nails

are usually affected and eczematous complications are common. Congenital or develops early in life.

Although the prognosis as to cure is unfavorable the condition may usually be kept in abeyance and the comfort of the patient improved. Internally pilocarpine and thyroid extract have been used. Externally, baths and lubricating ointments are helpful. Knowles³³ also mentions such preparations as cod-liver oil, iron, quinine and arsenic. Stelwagon⁵³ writes: "Unna speaks well of a course of treatment consisting of the daily application of sulphur ointment of variable strength, usually 5 to 10 per cent, and also of Ichthyol applications, 10 per cent, with water or in ointment, and frequent baths; he refers to several cases in which the good results remained for several months or longer after active measures had been discontinued. Occasional sulphur vapor baths in conjunction with the milder ointment and the bath plan will sometimes prove of additional benefit."

The following ointment may be applied thrice daily:

℞ Pulv. Camphorae . . .	grn x
Zinci Oxidi	ʒ j
Ichthyolis	f ʒ j
Lanum	ʒ j
M. f. ung.	
Sig. Apply three times daily.	

Clavus

Synonyms: Corn; Tylosis gompheux; Leichdorn; Hühnerauge.

A circumscribed, conic, deep-seated hypertrophy of the horny layer of the skin usually about the toes. The base is directed upward and the small end presses upon the corium.

It differs from other callous areas only in regard to its size and conical formation. The so-called "soft corn" is usually found on the lateral surface of the toes. It is cen-

trally depressed and of a grayish color, the moisture of the parts causing the softness.

For the removal of the corn the following may be painted on night and morning.

℞ Acidi Salicylici . . grn xxx
 Ext. Cannabis Indicae . grn x
 Collodii
 Collodii Flex. āā f 3 ij

After several days' application the parts are soaked in hot water and the horny mass may be readily removed.

Knowles³³ writes: "To alleviate the soreness there is nothing better than an Ichthyol plaster, and to cause softening of the horny layer salicylic acid plaster. The plaster is worn for four days; it is then removed, the corn soaked in hot water for from twenty to thirty minutes, and all the whitened area scraped away with the flat surface of a needle. The procedure is then repeated until the corn is eventually removed."

CLASS VI—NEW GROWTHS

Keloid

Synonyms: Cheloid; Alibert's keloid; Kelis; Kelos.

A fibrocellular new growth of the corium, that often develops on the site of a cicatrix as a cicatriform lesion. Lesions are irregularly shaped, elevated, smooth, pinkish and firm.

Surgical excision is usually followed by recurrence. Favorable influence is reported often to follow injections of thiosinamine or Fibrolysin. Stelwagon⁵³ writes: "The palliative measures which have seemed to me, in some instances, of service in retarding the growing tendency and lessening the pain and itching sometimes complained of, and occasionally in reducing the size of the growth, consist of frictions with a 10 to 25 per cent Ichthyol ointment, the continuous application of a plaster-like ointment made up of salicylic acid, 10-20 grains; lead plaster and soap plaster, each, 3 drams, and petrolatum to make 1 ounce; or this same ointment, with the still further addition of 1 or 2 drams of Ichthyol."

Campbell⁶⁹ recommends the following ointment:

℞ Ichthyolis
 Adipis Lanae Hydrosi . āā ʒ ss
 M. et f. ung.

Dermatitis Papillaris Capillitii

Synonyms: Acne keloid or acné cheloidienne (Bazin); Sycosis framboesiformis (Hebra); Dermatitis papillomatosa capillitii; Folliculitis nuchae sclerotisans (Ehrmann).

A follicular disease of the hairy border of the back of the neck extending upward toward the occiput, characterized by mixed sycosiform, nodular, and keloidal elevations. The

lesions at first small grow larger and become closely grouped. The patch is sometimes covered by a crust which exudes an offensive seropurulent discharge. In some instances the surface becomes raw and a papillomatous granulation tissue develops. The disease develops in adult life, most frequently in men, and particularly in the negro.

For the treatment similar measures are used to those employed in sycosis. Stelwagon⁵³ states: "The hairs are to be extracted, the parts frequently cleansed, and any pustules evacuated. A sulphur and Ichthyol ointment is the most valuable: 1 to 2 drams of the latter to 1 ounce of sulphur ointment full strength or weakened, according to inflammatory conditions. The object is not irritation, but mild antiseptic stimulation."

Hartzell²⁴ writes, "Ointments of sulphur and Ichthyol in moderate strength are perhaps the best applications, and in mild and early cases may suffice to bring about a cure."

Tuberculosis Cutis

Cutaneous lesions due to the presence of the bacillus of Koch including Tuberculosis Ulcerosa, Tuberculosis Verrucosa, Scrofuloderma, Lupus Vulgaris, and Tuberculids.

In all forms of tuberculous lesions constitutional treatment is of the greatest importance. It should include good nutritious food, fresh air, sunshine, outdoor exercise, and the administration of such remedies as cod-liver oil, hypophosphites, iron, quinine, iodine, and alterative tonics. Tuberculin injections are often useful. Finsen treatment and the X-ray are also of value. Depending upon circumstances local measures may be either mild and stimulating or destructive.

When the disease is at all extensive or is attended with destructive changes Stelwagon⁵³ advises the use of a mild application. He states that, "Brooke's formula is the most satisfactory:

R	Oleati Hydrargyri (5%)	ʒ j
	Zinci Oxidi Pulv.	
	Amyli Pulv.	āā ʒ ij
	Vaselini Alb.	ʒ iv
	Acidi Salicylici	grn xx
	Ichthyolis	m xx

"This can be colored the skin tint by adding 10 to 30 grains of calamine or some Armenian bole. If the surface of the involved area is unbroken, this is to be rubbed in for several minutes night and morning, and, when possible, also spread upon lint and kept continuously applied as a plaster; if ulcerated, the latter method is the only feasible one."

Morris⁴² writes that Brooke's ointment "should be vigorously rubbed in night and morning, the parts being then thickly dredged over with starch powder. I have seen excellent results follow the use of this ointment."

For the treatment of catarrhal lupus Walker⁶² states, "If for any reason the patient objects to the operative treatment, a similar result may be achieved though much more slowly, by the application of antiseptics. Brooke's ointment enjoys a wide reputation in this connection."

Referring to lupus of the perianal skin and of the rectum Gant¹⁸ states as follows: "Considerable skill and unlimited patience on the part of physician and patient are required to effect a cure in this class of cases. An effort must be made to improve the mind and the physical condition of the sufferer and increase his resistance with the aid of hygienic measures and medical agents recommended in the treatment of other kinds of anorectal tuberculosis. Complicating tubercular and other forms of ulcerative caloproctitis are improved by Ichthyol (5 per cent), irrigations and silver nitrate (6 per cent) applications made to the lesions through a proctosigmoidoscope."

For local treatment he writes as follows: "Formerly the author curetted, cauterized, or burned lupoid ulcers with acids or other strong chemicals, but has abandoned these procedures in favor of fulguration with a graduated high

frequency—violet ray—spark followed by mild applications of Ichthyol.”

Referring to the treatment of lupus vulgaris simplex Walker ⁶² writes: “The nodules may similarly be reduced in number by another less painful method, namely, the very thorough application of oleate of mercury. The formula recommended by Allan Jamieson ³⁰ is:

℞	Ung. Hyd. Oleat (5%)	℥ j
	Ichthyolis	min xx
	Acidi Salicylici	grn xx

This must be thoroughly rubbed into the part for at least twenty minutes every night and ten minutes every morning.”

Lupus Erythematosus

Synonyms: Seborrhœa congestiva (Hebra); Lupus erythematodes; Lupus sebaceus; Ulerythema centrifugem (Unna); Scrofulide érythémateuse.

A new growth formation of superficial small cells characterized by circumscribed, pinkish or reddish patches covered with grayish or yellowish scales. Occurs almost entirely on the face and scalp and is chronic or moderately inflammatory. Tends to leave atrophic scars.

The disease occurs in two forms, the circumscribed or discoid (lupus erythematosus discoides) which is chronic and the rarer disseminated form (lupus erythematosus disseminatus) which is acute with constitutional symptoms.

The disease does not respond readily to treatment. Internally quinine, arsenic, salicin and sodium salicylate are useful. Locally mild applications such as saturated solution of boric acid, calamine-zinc oxide lotion or Lassar's paste may be applied. For reducing the hyperemia Ichthyol is reported to be valuable.

Stelwagon ⁵³ states that both Unna ⁵⁹ and Brocq speak

well of remedies which tend to reduce cutaneous hyperemia or to modify the conditions which produce it. Unna also advises the internal administration of 5 to 15 drops of Ichthyol three times daily. Stelwagon speaks favorably of Unna's Ichthyol plaster-mull and of the Ichthyol collodion application.

For external application Beatty⁴ mentions Unna's Ichthyol varnish

℞	Ichthyolis	40
	Amyli	40
	Albuminis	1½
	Aquae	ad 100

Morris⁴² writes, "The best application of all is Ichthyol in the form of a lotion or ointment, or as a zinc Ichthyol plaster applied at night after bathing the parts with hot water."

Knowles³³ writes: "In the less inflammatory instances zinc sulphate and potassium sulphide, each 5 to 15 grn. to the fluid ounce of water, act well; or 50 per cent Ichthyol lotion made in water is efficacious. In the deeper seated type of case, trichloroacetic acid painted on the surface, the Roentgen ray, radium or carbon dioxide snow are of use."

For the internal treatment quinine sulphate in 5 grain doses, three to four times a day, or salicin, 10 to 20 grains four times a day are reported to be of benefit. Attention should be given to the general health and appropriate treatment instituted to correct digestive disturbances, constipation, general debility or neurasthenic conditions.

CLASS VII—NEUROSES

Functional diseases of the nervous system; disturbances of the nerve centers or peripheral nerves not due to any demonstrable structural change.

Pruritus

A functional affection of the skin without eruption, characterized by itching, burning and prickling sensations. Is to be distinguished from the symptom pruritus (itching) associated with other skin diseases accompanied by structural changes.

Pruritus may be local or generalized. Of the local forms common varieties are Pruritus scroti, Pruritus ani, and Pruritus vulvæ. Other forms are Pruritus hiemalis (winter itch) Pruritus senilis, and Bath pruritus.

Treatment is first directed toward the removal of etiologic factors. In all varieties of pruritus relief can be at least temporarily given by suitable external applications. Among the numerous reports on the adaptability of Ichthyol for this purpose the following may be mentioned: Griffith²¹ and Cerna; Doizy¹¹; A. Ravogli⁴⁸; Hirschman²⁹; S. Macy³⁸; Hirschkron²⁸; Weissmann⁶³; H. W. Freund.¹⁵

Weissmann⁶³ describes two cases of vulvar pruritus in which Ichthyol afforded results more satisfactory than are usually obtained with cocaine. He obtained equal success also in scrotal pruritus.

Polak⁷¹ writes that among the local sedatives and curative measures for pruritus vulvæ may be mentioned carbolic acid lotions, 5 to 10 per cent silver nitrate solutions, or pure Ichthyol. Graves²⁰ also refers to the relief from itching which may often be obtained by smearing the parts with pure Ichthyol.

In cases of pruritus ani of obscure origin, in which the skin about the anus is not as well nourished as it should

be, or when there are nervous or infectious complications, F. S. Macy³⁸ introduces a tampon, once daily after a stool, of a 10 per cent Ichthyol-glycerin solution if there be constipation, or with lanum if there be none, well up into the rectum. This is best done through a speculum. Though the latter may cause some pain at first, he states, the insertion of the instrument is itself an aid to the treatment. The fissures, if there are any, heal, and the chronic constipation is benefited.

MacKenna³⁹ mentions the addition of Ichthyol to local applications in the form of lotions. Beatty⁴ suggests the following formula:

R̄	Ichthyolis	grn x-xxx	.
	Mentholis	grn v-x	
	Adipis Lanae . . .		
	Vaselini	āā ʒ ss	

In the treatment of pruritus ani S. G. Gant¹⁸ advises as follows: "When colon and rectum are involved by catarrhal or specific coloproctitis complicated by ulceration and a profuse discharge containing pus, blood, mucus, and débris, good results are obtained through irrigating the large intestine from anus to the cecum twice daily with a solution of Ichthyol."

"Silver nitrate, 6 per cent, and Ichthyol, 25 per cent solutions are reliable healing agents for scratch wounds of the perianal skin when used night and morning."

Morris⁴² writes, "Irritation due to glycosuria may be relieved by the application of menthol, or the parts may be bathed with water as hot as can be borne, and after drying smeared with Ichthyol ointment (10 per cent.). Ichthyol may almost always be used with advantage. It is well to begin with a weak solution, such as 1 in 16 parts of water, and gradually increase the strength up to equal parts. The effect is often increased by the addition of a small quantity of precipitated sulphur. Ichthyol may also be applied in ointment or in soap."

CLASS VIII—DISEASES OF THE APPENDAGES

Onychauxis

Synonym: Hypertrophy of the nail.

An overgrowth of the nail in any direction often accompanied by changes in shape, color and direction of growth. Usually acquired but may be congenital. Onychia is an inflammation of the nail bed from pressure, knocks, etc., and may be associated with seropurulent undermining. Paronychia results from tight shoes or from slight lateral overgrowth (ingrowing nail).

Stelwagon⁵³ states as follows: "Onychia, if of mild character, can sometimes be managed by frequent washings of the parts with saturated solution of boric acid and continuous applications of a 25 to 50 per cent ointment of Ichthyol."

Knowles³³ writes: "Onychia, depending upon its severity, is treated with soakings in a saturated solution of boric acid; ammoniated mercury, 20 grn. to the ounce of zinc ointment; Ichthyol, 2 drams to the ounce of petrolatum or surgical interference. The two latter preparations are also applicable to paronychia."

Alopecia

Synonyms: Baldness; Calvities; Kahlheit; Haarschwund.

Falling out of the hair.

The general health of the patient and the condition of the scalp should be considered. Stelwagon⁵³ reports that in some cases arsenic, fluid extract of jaborandi, or pilocarpine, and sulphur in small doses have an influence. External applications are more effective.

Sutton⁵⁷ writes, "Ichthyol is a favorite with Unna, and

the following mixture, suggested by Sabouraud, is highly endorsed by Chipman:

℞ Acidi Salicylici	3 ss
Ichthyolis	3 ss
Liq. Carbonis Detergentis	3 iss
Alcoholis (25%) q. s. ad	f 3 vi"

Sibley⁷³ writes that immediately after the shampoo a suitable lotion or ointment should be applied and repeated daily. Sulphur or Ichthyol, with or without the addition of salicylic acid, is most beneficial.

Alopecia Areata

Synonyms: Area Celti; Alopecia circumscripta; Porrigo decalvans; Tinea decalvans.

Characterized by patchy baldness in round areas.

For the local treatment of this condition which is the "Pelade" of the French, Beatty⁴ recommends the following formula for local treatment:

℞ Chrysarobini	5
Acidi Salicylici	2
Ichthyolis	5
Vasellini	88

"A little of this ointment should be well rubbed on and around the affected areas with one piece of flannel, and then rubbed in dry with another piece of flannel once or twice daily. This makes the white areas brown, like sunburn, and makes them less noticeable."

Local treatment should be directed to a stimulation of the part, promoting circulation, aiding the nutrition of the affected area, and to destroying any pathogenic parasite present.

Ichthyol in an ointment, either alone or in combination with resorcin or thymol is recommended by Sibley.⁷³

Sycosis Vulgaris

Synonyms: Sycosis; Non-parasitic sycosis; Folliculitis barbæ; Sycosis coccogenica; Acne mentagra; Mentagra.

A chronic infection of the bearded regions characterized by small, yellowish, rounded or acuminate papules and pustules pierced by hairs. Hairs do not fall out but are firmly fastened in follicles.

The disease is rebellious to treatment which is usually confined to external applications of ointments and lotions of an antiseptic nature. Stelwagon⁵³ states that "Ichthyol is another valuable remedy in the treatment of sycosis, employed usually as an ointment in the strength of from ½ dram to 2 drams to the ounce of simple cerate. In weakest proportion it is also a safe application for the beginning treatment. It may also, conjointly with an ointment, be employed as an aqueous solution in from 2 to 10 per cent strength. It may likewise be used in an ointment of sulphur, with advantages, as follows:

℞ Sulphuris Praecipitatae	℥ ss-iss
Ichthyolis	℥ i-iss
Petrolati q. s. ad . . .	℥ j

Jay Frank Schamberg⁵⁰ suggests the following formula:

℞ Ichthyolis	℥ j
Petrolati	℥ j

MacKenna³⁹ writes: "Ointments are as a rule ill tolerated in this condition, they interfere with the radiation of heat, and often their use is followed by an acute exacerbation of the disease. But I have found this ointment to be well borne.

℞	Ichthyolis	grn v
	Hydrargyri Ammoniaci	grn v
	Ung. Zinci Oxidi	℥ i

This may be spread on strips of lint and applied daily, some of the ointment being rubbed gently into the skin before each change of the dressing." "Pastes are better tolerated than ointments, and Lassar's Paste with 1 per cent of Ichthyol added is often well borne."

A. A. Stevens ⁵⁴ writes: "If the parts are not irritable, stimulating applications are useful, and one of the following may be selected:

℞	Sulphuris Praecip. grn xxx-℥ iss
	Unguenti Aquae Rosae . ℥ j
	M. Sig: Apply twice daily.

℞	Hydrarg. Ammoniaci grn xx-xxx
	Petrolati ℥ j

℞	Ichthyolis ℥ j
	Petrolati ℥ j
	Sig: Apply twice daily."

Knowles ³³ writes: "If the pustules are large, furuncular-like, an Ichthyol lotion, 1 dram to the fluid ounce of water, or 1 to 2 drams to the ounce of petrolatum, is indicated."

Whitfield ⁶⁵ writes, "After trying numerous local applications I have found two preëminently useful, namely frequent fomentations with 1 in 4000 mercuric chloride and the use of the following (Brooke's) ointment:

℞	Acidi Salicylici	grn xx
	Ichthyolis	℥ ss
	Ung. Hydrarg. Oleatis (10%)	℥ j
	Pulv. Amyli	℥ ij
	Paraffini Mollis	℥ ss
	Pulv. Zinci Oxidi	℥ ij

These may be combined, the fomentation being applied several times a day and the ointment in the intervals."

Acne

Synonyms: Acne vulgaris; Acne disseminata; Acne simplex.

A local inflammatory disease of the sebaceous glands and hair follicles characterized by an eruption of papules, pustules, black heads and occasionally sebaceous cysts usually upon the face, beginning at puberty and showing a tendency to chronicity.

Attention to the diet and treatment of gastro-intestinal tract and especially constipation is important. Local applications should be stimulating in nature. Stelwag⁶⁸ states: "In recent years Ichthyol has been added to the therapeutics of acne, and is often useful. It is employed in lotion or ointment form, usually the latter; as an ointment, 1 to 3 drams to the ounce of equal parts of simple cerate and rose water ointment; or as a lotion, about the same strength with water. It seems to be more especially valuable in acne of a pustular and pustulotubercular type, and in the latter its application as a 25 per cent plaster is often advantageous. A compound ointment containing both sulphur and Ichthyol is also of value:

℞ Sulphuris Praecipitatae	℥ ss-ij
Ichthyolis	℥ i-ij
Adipis vel Petrolati q. s. ad	℥ j"

Campbell⁶⁹ recommends the following:

℞ Bismuthi Subnitratris . . .	℥ ij
Ung. Hydrarg. Ammoniati	℥ ij
Ichthyolis	℥ ij
Petrolati	℥ iiss

℞ Ichthyolis	m xxx
Acidi Salicylici	grn xxx
Saponis Viridis	grn xvij
Lanum q.s. ad	℥ iv

M. Sig. Apply at night and wash off in the morning with hot water.

There is abundant evidence as to the value of Ichthyol for the treatment of acne. There follow a few brief quotations from the works of eminent authorities:

"It is particularly useful in irritable acne and certain forms of acne rosacea" (Butler⁵). "Valuable externally for treating acne" (Martindale). "Ichthyol is an excellent means of introducing sulphur into the system, and it exerts a remarkably beneficial action" (Jessner⁶²). Walker⁶² suggests that drugs of an antiseptic nature be incorporated with an ointment base. Ichthyol, he states, is the one most generally used. Schamberg,⁵⁰ Knowles,³³ and many others also speak well of its use in this condition.

Beatty⁴ states as follows regarding the use of Ichthyol in acne: "Ichthyol soap at bedtime before the use of sulphur lotion is helpful. The face is lathered with the soap and hot water; the lather is allowed to remain on for 10 to 15 minutes. It is then washed off, the part dried, and the sulphur lotion applied."

Acne Rosacea

Synonyms: Rosacea; Gutta rosacea; Gutta rosea; Acne erythematosa.

A chronic disease of the skin usually limited to the middle third of the face from above downward, characterized by a capillary dilatation, papules, pustules and hypertrophy. The nose may become markedly enlarged with gland mouths widely dilated. The color is red or purplish-red.

Although the disease is obstinate, most cases respond favorably to treatment. Several months, however, may be required to effect a cure even in mild cases. Supervision of the diet, attention to the bowels and the avoidance of possible exciting influences are important. Tea, coffee, and alcoholic beverages should be excluded from the diet.

Hartzell²⁴ writes that the most effective way to use Ichthyol in acne rosacea is to apply it as a varnish with a

brush using equal parts of Ichthyol and water. After a few minutes it dries leaving a brown varnish-like covering which can be readily washed off with hot water.

Stelwagon⁶⁸ writes, "Ichthyol, in ointment and lotion of 10 to 25 per cent strength, is often of striking advantage in this disease." He also states that "it is difficult to say in what particular case its best effects are to be expected; probably in those of markedly hyperemic type, and in which suppurative lesions are numerous. It will often act more satisfactorily as a lotion than as an ointment."

When somewhat hard nodular or papular lesions are present, the author favors the use of Ichthyol plaster, 25 per cent.

In corroboration of the above contention that a lotion often acts more satisfactorily than an ointment is the statement by J. Darier⁹ that "Ointments are often badly tolerated. Sulphur and Ichthyol pastes, powders, bathing with lukewarm naphthol or Ichthyol soap solution, are decidedly preferable."

Where there is extensive scarring the following ointment may be tried:

℞ Acidi Salicylici	10
Ichthyolis	30
Petrolati	ad 100

Certain eye lesions such as blepharitis, conjunctivitis, and keratitis may be associated with rosacea. According to R. Cranston Low⁷⁰ these may be treated with a one per cent Ichthyol ointment or a one per cent sulphur ointment.

Friedenstein⁷⁴ reports a case of facial involvement of 15 months standing and in which the right eye, after being inflamed for eight or nine weeks, spontaneously became better. A new attack had been in progress for a week during which the face had been worse, there being lachrymation and congestion of the eyeball. There was a small nodule over the limbus, with fine gray clouding extending 1 mm. into the cornea. By the use of zinc and Ichthyol the lesion was healed in nine days.

Hyperidrosis

Synonyms: Excessive sweating; Idrosis; Ephridrosis; Sudatoria; Polyidrosis.

A functional acute or chronic, local or general disorder of the sweat glands characterized by an increased production of sweat.

Internally such systemic remedies as ergot, belladonna, gallic acid, the mineral acids, quinine and tonics may be tried. Locally astringent lotions and dusting powders are useful.

Norman Walker⁶² writes: "In cases where the disease affects the palms and soles, the latter of which is the condition which most frequently comes under notice, Leistikorn lays great stress on the importance of recognising whether the case is one of hot or cold sweating. If cold he advises the use of hot baths, with the addition of vinegar, spirit of camphor, etc. The parts are then carefully dried and washed with formalin soap, the lather of which is allowed to dry on. The principle of this treatment is to induce a hyperaemia which will correct the anemic condition of the skin. The same effect is attained by the application of some such ointment as

℞ Terebinthinae	
Ichthyolis	āā ʒ j
Camphorae	ʒ ss
Ung. Zinci Oxidi	ad ʒ j"

CLASS IX—PARASITIC AFFECTIONS

Ringworm of the General Surface

Synonyms: Tinea circinata; Tinea trichophytina corporis; Trichophytosis corporis; Ringworm of the body; Ringworm of the non-hairy surface; Ringworm of the glabrous skin.

Generally appears as small, slightly elevated, sharply limited, somewhat scaly, hyperemic spots. They spread uniformly peripherally and tend to clear centrally as spreading continues, presenting a ringlike appearance. Face, neck, hands and forearms are the common sites.

Morris⁴² writes, "The most effective agent for the purpose is chrysarobin, which may be applied as an ointment composed of one half dram of the drug to one ounce of lanolin or in the form of Unna's ung. chrysarobin co., which consists of 5 parts of chrysarobin, 2 parts of salicylic acid, 5 parts of Ichthyol and 100 parts of unguentum simplex."

Ringworm of the Bearded Regions

Synonyms: Tinea sycosis; Tinea barbae; Barber's itch; Trichophytosis barbae; Hyphogenic Sycosis; Herpes tonsurans barbae; Mentagra parasitica.

A fungous skin disease occurring in round, scaly, hyperemic patches. May be superficial or deep seated. The superficial type is readily distinguished by its characteristic ring-like configuration and by the evidence of hair involvement. The deep-seated or nodular form, in addition to the involvement and loss of hair shows a peculiar lumpiness of the parts.

All cases are readily amenable to treatment. In the affected area the hairs should be extracted and the hair covering the neighboring regions also should be kept as short as

possible. Locally, lotions of sodium hyposulphite and mercuric chloride, and ointments of white precipitate or calomel may be tried. Treatment should be vigorously pushed until all traces of the disease have disappeared and then continued intermittently for a period to prevent a relapse.

MacKenna³⁹ writes: "The ideal method of treatment is an epilation dose of the X-ray followed by starch and boric poultices. After epilation of the skin, it may be rubbed daily with an ointment containing

℞ Hydrarg. Oleatis . . . grn x
Ichthyolis ʒ iv
Ung. Zinci Oxidi . . . ad ʒ i

Knowles³³ states that, "Cases of inflammatory ringworm of the scalp should be treated with much milder remedies than the indolent non-inflammatory type. In this kerion-abscess-like outbreak lotions act exceedingly well, particularly Ichthyol lotion, $\frac{1}{2}$ to 2 f. ʒ to the fluid ounce of water; or the hyposulphite of soda, $\frac{1}{2}$ to 1 ʒ to the fluid ounce of water or witch-hazel."

Wounds and Minor Surgery

The uses of Ichthyol in the treatment of wounds, inflammations and minor surgical conditions are many, and few of the authorities fail to describe them. The scope of this little book does not permit, however, of much more than a passing mention of a few of the commoner conditions. So, too, in the matter of quotation, we have restricted ourselves to reprinting a few short paragraphs from standard text books, the authors of which will at once be recognized as authorities. In reading these paragraphs it will be noted that they are not merely bald "Testimonials" but that in practically every case they include some really helpful suggestion for the treatment of the condition under consideration. In every case, moreover, a reference is made to the bibliography, thus enabling the reader, if he so desires, to investigate further.

There are a number of diseases which, depending upon the classification used, might be described either under Skin Diseases or Minor Surgery. Of these the following were described in the section on Skin Diseases:

Burns (Dermatitis Ambustionis)	page 43
Chilblains (Erythema Pernio)	page 45
Frost-bite (Dermatitis Congelationis)	page 43
Carbuncle (Carbunculus)	page 40
Furuncle (Furunculus)	page 39

Wounds

For the dressing of wounds, whether incised, lacerated, contused, punctured or gunshot, the use of Ichthyol has been extensive. In fresh open wounds most authorities apply the undiluted Ichthyol, which materially lessens the pain; after that, an Ichthyol ointment is used. A useful paint for superficial wounds is as follows:

℞ Ichthyolis min xxx
Traumaticin f ʒ v

Hold edges of wound in perfect apposition, and apply with camel's-hair brush.

C. W. Duggan¹³ employs the following treatment for septic wounds: "Mix equal quantities of pure Ichthyol and glycerin, spread it on boric lint by means of a camel's-hair brush, and apply it to the wound. The wound should be dressed daily. If there is also suppuration from a sinus, as in the case of a bullet wound, it should be syringed out with pure alcohol; in this case dressing with gauze is preferable to boric lint. This treatment produces a healthy granulating surface in a few days, and does not cause any irritation of the wound. The daily dressing has a great advantage over fomentations which necessitate frequent changing and disturb the patient, besides prolonging suppuration. The less moisture about the wound the better. The results obtained by this treatment are most brilliant."

In a more recent article¹² abstracted in the Journal of the A. M. A. the author points out that "The efficient treatment of gunshot wounds involves the two principles of antiseptics and osmosis. These two principles are, he claims, fulfilled by a combination of Ichthyol and glycerin which he has been using for nearly three years. Duggan cites the case of a soldier who had received an abdominal wound which failed to heal under every method of treatment used in various military and civil hospitals. Ten months after the injury Duggan saw him. He had an inflamed scar at exit; evening temperature 101.2° F., no rigors; equal parts of Ichthyol and glycerin were applied to scar preparatory to operation next day. During the night the scar gave way, and a large quantity of pus, with a strong fecal odor, escaped; the abscess cavity was syringed out with alcohol and the wound was dressed with equal parts of Ichthyol and glycerin; the wound was dressed again at night. A probe could be passed into the abdominal cavity in the direction of the entrance scar for a distance of 5 inches. These dress-

ings were continued for three weeks when the wound healed and the patient was discharged."

Writing of his experience with the treatment suggested above T. W. A. Daman⁸ states: "Remarkable and altogether surprising results are the rule, especially in cases of severe suppuration and sloughing accompanied by edema and induration of the surrounding tissues. The immediate results are rapid reduction of swelling and induration, and almost instant easing and removal of pain. Rapid cessation of sepsis and of purulent discharge follows, accompanied by the quick formation of healthy granulation tissue and equally quick production of a covering of skin, and, finally, complete healing by cicatricial tissue, the cicatrix invariably being a good one. It is, of course, taken for granted that any foreign body, such as dead bone, clothing, or piece of metal, has been removed, or is not present."

For the treatment of inflammation of cervical lymph nodes Vaughan and Burnham⁶¹ state: "When the acute process has begun to subside, the treatment may be changed to the application of heat, which will aid resolution. A favorite application in cases of threatened suppuration is Ichthyol ointment (50 per cent) applied thickly over the swollen area. It is in cases of this type that poultices act most favorably."

Oliver T. Osborne⁴⁴ writes, "In subacute swellings of the lymphatic glands application of Ichthyol ointment 10 to 20 per cent, or in the same strength in glycerin or oil, have seemed to hasten the reduction of the swellings."

In more or less severe infections of pediculosis accompanied by glandular enlargement C. Knowles³³ advises as follows: "If there is marked enlargement of the glands of the neck an ointment is required for soothing and absorptive purposes. There is no better preparation for this purpose than Ichthyol salve consisting of Ichthyol 2 dr. to 6 dr. of petrolatum. It will be found desirable in warm weather to thicken this preparation by the addition of from 1 to 2 drams of powdered zinc oxide and to reduce the petrolatum

sufficiently to make the compound 1 oz., therefore a 25 per cent ointment."

Abscesses

In the treatment of abscesses, atheromatous cavities, hydroceles, etc., Unna⁵⁹ finds the desiccant and astringent actions of Ichthyol most helpful. An advantage he esteems highly is its harmlessness.

In the treatment of prostatic abscess L. W. Harrison²³ uses an Ichthyol suppository. He writes: "After the abscess has burst as it usually does, into the urethra, resolution may be assisted by the use of Ichthyol in the form of a suppository as follows:

℞	Ichthyolis	grn ij
	Ext. Belladonnae	grn ¼
	Ext. Opii	grn ¼
	Butyr Cacao	ad grn xv
	Fiat Suppositoria	j

Sig. One suppository to be used, night and morning."

Bubo

"The treatment of acute bubo during the early stages consists in rest with the application of an ice cap or the use of Ichthyol ointment (20 to 50%)."—Vaughan and Burnham.⁶¹

E. M. Foote¹⁴ writes, "The inguinal glands, if moderately inflamed, may be treated by counter-irritants; e.g. equal parts of belladonna ointment and an ointment containing Ichthyol ʒ j to vaseline ʒ j. This is more likely to succeed in glands swollen from non-venereal causes."

Sir William Whitla⁶⁶ writes, "Where much inflammatory pain is present hot fomentations may be applied or warm poultices used. A good routine application is Ichthyol and

glycerin (1 in 4). In all cases the penile sore should be cleansed and treated with antiseptics."

Contusions

For the relief of pain and swelling in contusions and sprains Ichthyol may be applied in ointment form or as a liniment (Ichthyol in alcohol and ether) or equal parts of Ichthyol and glycerin.

E. M. Foote¹⁴ writes, "Contusions of the testicle are apt to be followed by pain, more noticeable toward night or after exertion. An ointment containing belladonna or Ichthyol should be applied and the testicle supported by a suspensory bandage."

Fissures

Samuel G. Gant¹⁸ writes, "When the pain and sphincteric irritability are moderate the following ointments used through a hard rubber pile pipe, collapsible tube having a long nozzle, or ointment syringe, add greatly to the patients' comfort.

℞	Chloretone	grn iv
	Thymolis Iodidi	grn xxxv
	Ichthyolis	grn j
	Petrolati	q. s. ad ʒ j

"Acute fissures are usually healed in from two to four weeks by cleansing and swabbing them with silver nitrate, 6%; Ichthyol, 10%; balsam of Peru, 20%, or argyrol, 15%, three times weekly but silver and Ichthyol solutions procure the best results. A combination of Ichthyol 15%, chloretone 10% in flexible collodion when painted over the lesion relieves pain, protects the wound, and stimulates healing.

"Chronic fissures are anesthetized and treated once with silver nitrate 25% which forms silver albuminate that pro-

fects the ulcer, or Ichthyol 50 to 75% followed by the above mentioned milder applications. In obstinate cases plugging the fissure with a paste composed of Ichthyol and bismuth subnitrate is curative, and makes the patient comfortable."

J. Rawson Pennington,⁴⁵ former President of the American Proctologic Society, writes, that in cases seen early palliative treatment often suffices. He applies Ichthyol full strength by aid of a glass rod. If the pain is severe a preliminary application of cocaine is useful. The author writes, "It is best to move bowels with warm or hot enemas at night, just before retiring. Then apply:

℞ Ichthyolis	grn xvi
Ext. Belladonnae	grn iij
Lanum	
Vaselini	āā ʒ ij

M. Ft. Ung. Dispense in collapsible tubes."

T. Chittendon Hill,²⁷ also a former President of the American Proctologic Society, writes, "Tuttle recommends pure Ichthyol applied to the fissure two or three times a week. My own preference is for the milder protective applications of Ichthyol and balsam of Peru, depending upon the gradual dilatation of the sphincters to effect a cure."

Sir William Whitla,⁶⁶ a distinguished English authority writes, "The distress and pruritus accompanying the affection cannot satisfactorily be relieved with cocaine or morphia, and the writer finds nothing so successful as the old B. P. Ungt. Conii made of double strength combined with Ichthyol. This must be inserted well within the sphincter."

In fissure of the nipple Campbell⁶⁹ recommends that the following ointment be applied after nursing:

℞ Ichthyolis	ʒ ij
Glycerini	ʒ iij
Lanum	ʒ v

M. Sig. Apply freely after nursing and remove by thorough washing before next nursing.

Hemorrhoids

Vaughan⁶¹ and Burnham write, "Palliative treatment consists in daily cold water enemata, immediate reduction when prolapse occurs, prevention of constipation, and the use of ointments and suppositories. A suppository containing 5 grains of Ichthyol, 5 grains of tannic acid and 10 grains of extract of hamamelis, has been found especially useful."

E. M. Foote¹⁴ writes, "Local treatment will naturally be directed to the relief of the most annoying symptoms; thus if the patient is annoyed with itching, the parts should be painted with a five per cent solution of carbolic acid or a salve containing tannic acid and Ichthyol each one part, belladonna ointment and the cerate of lead subacetate, each five parts."

S. G. Gant¹⁸ writes, "Patients prefer ointments to suppositories because they are conveniently applied through a pile pipe or collapsible ointment tube, and because the latter are often soft or crush or induce pain when inserted.

"When it is desirable to minimize suffering, diminish swelling, or cause hemorrhoids to shrink up, the following combination of drugs will accomplish the desired results:

℞ Ichthyolis grn xxxij
 Cocainae Hydrochloridi grn ij
 Ext. Belladonnae . . .
 Ext. Hamamelis . . .
 Ext. Stramonii . . . āā grn iij
 Olei Theobromatis . . . q. s.
 Misce et fiat suppositoriae, No. viij

Sig. Introduce one every four hours until patient is relieved and thereafter as indicated."

For the reduction of extruded internal hemorrhoids the author advises continuous application of cold water, ice bags and astringent solutions including Ichthyol. He has found the following suppository useful:

℞ Ichthyolis
 Acidi Gallici āā grn xxiv
 Bismuthi Subnitratris grn xxxij
 Olei Theobromatis q. s.
 Misce et fiat suppositoriae No. vj.
 Sig. Insert one three times daily.

When the perianal skin is excoriated he favors the application of silver nitrate, dusting powders or a healing ointment such as:

℞ Ung. Picis Liquidae 3 j
 Zinci Oxidi 3 ij
 Ichthyolis 3 j
 Ung. Aquae Rosae 3 j
 Misce et fiat unguentum.

Sig. Apply to perianal skin three times daily following cleansing with hot water or boric acid.

The following prescriptions all of which are useful have been taken from the most recent writings of the authors whose names follow:

℞ Acidi Tannici grn iij
 Ichthyolis grn j
 Butyr Cacao grn x

M. fiat suppos.

Sig. Introduce one such twice a day.

—A. Caillé.*

℞ Acidi Tannici grn x
 Pulvis Camphorae grn v
 Ichthyolis 3 iss
 Ung. Zinci Oxidi ad 3 j

—G. E. Rehberger.

℞ Ichthyolis
 Acidi Tannici āā grn v
 Ext. Belladonnae
 Ext. Stramonii āā grn 1/3
 Ext. Hamamelis grn x

M. f. suppos.

—P. Lockhard-Mummery.**

Ulcers

For the ambulatory treatment of chronic ulcers of the leg Vaughan⁶¹ and Burnham advise that "The leg and ulcer should be well cleansed daily with soap and water, except the eczematous cases which may be cleansed with oil. After cleansing it is necessary to decide the method of application best adapted to the healing of the particular ulcer. In all cases the attempt is first made to remove the superficial slough and to have the ulcer take on the healthy appearance of a healing wound. This may be accomplished by the application of the continuous wet dressing (boric acid or aluminum acetate), by the application of mild antiseptic ointments such as boric acid ointment or weak mercurial ointments. Ichthyol ointment (10 to 20 per cent) gives most favorable results in some cases."

Whitla⁶⁶ writes, "After cleansing the limb with soap and water, and drying with ether, the varicose veins are painted with Ichthyol Collodion (10 per cent)." The author suggests that a thick layer of antiseptic dusting powder be applied to the ulcer, and after brushing the entire limb with zinc jelly, covering with a double headed starched muslin bandage wrung out of water. Where the ulcer is painful he suggests that it be smeared over with Ichthyol.

For ulcer of the rectum J. Rawson Pennington⁴⁵ advises, "Probably absolute rest in bed is the first thing, it may be advisable to raise the foot of the bed in addition. The food should be such as leaves little residue, and laxatives may be necessary to keep the canal free; for the same reason an enema may be necessary once or twice daily. Dilatation of the anus also favors drainage.

"Ichthyol in varying strengths of the pure drug is a splendid application in some cases."

The infective process resulting in the ulcerative condition, chancroid, may, according to E. M. Foote,¹⁴ be treated so as to prevent spreading of the infection. He states that "Most chancroids run a more or less definite course to re-

covery, but much can be done to prevent further infection of the surrounding skin: The parts should be bathed twice or three times a day with mild antiseptics, in order to remove or neutralize the discharge. The individual ulcers may be touched up with strong liquids such as peroxide of hydrogen or carbolic acid solution, 5 per cent, or with pure Ichthyol."

Varicose Veins

W. P. Graves²⁰ writes, "Treatment of the non-pyogenic cases consists in complete rest in bed with elevation and immobility of the leg. Comfort is given by applying immense cotton swathing to the leg, surrounded by hot water bags. Local medical applications to the leg are of no great curative value but relief to the pain is sometimes afforded by painting the leg with Ichthyol, or by applying compresses soaked in a weak lead and opium lotion."

Vaughan⁶¹ and Burnham write, "Severe cases should be confined to bed with an ice-cap applied to the area of phlebitis. Later, an Ichthyol ointment should be applied and the patient allowed to be up and about. Although the indurated vein may be felt for several months, the acute symptoms usually disappear in a few weeks.

"In mild cases occurring in the neighborhood of varicose ulcer, it is usually necessary to send the patient to bed. Ichthyol may be applied and the leg bandaged so as to give firm support. The indurated veins usually disappear long before the ulcer is healed."

For varicose veins of the vulva the authors suggest the following treatment: "When the veins become thrombosed and tender, the patient should be put to bed and an ice-cap should be applied to the painful area. When the pain has diminished, the disappearance of the induration can be hastened by the application of Ichthyol ointment (25 per cent)."

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APPENDIX

History, Origin, and Manufacture of Ichthyol

"Ichthyol" was first brought into commerce in 1882 by Rudolf Schröter. As a medicine the preparation was originally introduced in skin diseases by the eminent dermatologist, P. G. Unna, of Hamburg, in 1882. Since then, however, its application has been extended beyond the dermatological field.

The crude oil which serves as a starting point in the manufacture of "Ichthyol" is obtained from a bituminous stone found in the immediate vicinity of Seefeld in the Austrian Tyrol. The veins of this stone are enveloped by strata of another rock known as "gallenstein," which latter shows more or less perfect impressions of marine animals, particularly of fish, thus giving the mineral considerable paleontological interest. The "gallenstein," however, is not used in the production of "Ichthyol."*

The stones being somewhat variable in character and composition, partly brownish, partly black-colored, and of different specific weights, the oil, obtained from the different kinds is of course also of somewhat variable composition. The manufacturer of Ichthyol makes a careful selection among the different qualities according to a system adopted as a result of long experience. The crude oil used for making "Ichthyol" thus is very constant in composition and particu-

* It is not even remotely to be considered that these fish fossils have anything whatever to do with the therapeutic properties of the finished "Ichthyol" products. It is now fairly well settled that the therapeutic virtues of these remedies depend upon the organically combined sulphur (sulphidic sulphur) contained in them. But the presence of these impressions of extinct fishes and other marine animals in the mineral adjacent to the veins which are worked and solely used as raw material served the imagination of the originator to construct the fanciful name "Ichthyol" (Ichthysoleion) for his products.

larly in its content of organically combined sulphur (sulphidic sulphur).

R. Schröter developed the process of purifying the oil and making it soluble in water (*Monatshefte f. prakt. Dermatologie*, Dec., 1882) and applied to the product of his manufacture the trade-mark "Ichthyol." In 1884 he founded the Ichthyol Company of Hamburg which has continued the production of "Ichthyol" ever since it became the successor to R. Schröter. The American business of this Company is now in the hands of the Ichthyol Co., of New Jersey, and Merck & Co. are the exclusive selling agents for "Ichthyol" in the United States and Canada.

Being a product obtained by the dry distillation of a specific bituminous mineral found in a particular locality, "Ichthyol" possesses chemical characteristics of its own which distinguish it from other sulphonated distillates derived from minerals found elsewhere and perhaps of entirely different geological origin and nature.

Practical experience has shown that all substitutes for "Ichthyol" reflect in their ultimate composition the inherent peculiarities of the particular raw material from their given source, the individual processes of the manufacturers, and the degree of care with which these processes are carried out.

While many of the substitutes often show wide variations in composition, "Ichthyol" remains a very uniform product with a high sulphidic-sulphur content because of the systematized selection of raw material and the standardized process of manufacture.

The Sodium compound is sold as "Sulpho-ichthyolate (Sodium)" while the Zinc preparation is marketed as "Sulpho-ichthyolate (Zinc)." The position of the name of the "base" in parenthesis, after the trade-mark name, avoids the possibility of the misunderstanding that might otherwise result in making it appear that these preparations are definite chemical salts, which they are not. All references to "Ichthyol" in literature relate to the Ammonium com-

pound made by the Ichthyol Company, from the Seefeld shale.

Substitutes

A large number of imitations of "Ichthyol" are to be found on the market, some under various more or less misleading names. These substitutes, being derived from sources other than the described Seefeld mineral, vary from "Ichthyol," and from each other, in important physical and chemical characteristics, and hence presumably also in therapeutic properties.

Reliable investigations have fully established the chemical non-identity of the various imitations with "Ichthyol."

As has been stated various "Ichthyol" substitutes, owing to the differences in the sources of their raw materials and processes of manufacture, differ from "Ichthyol" and from each other in ultimate composition. It may be said that in so far as they differ in composition from "Ichthyol" they may be good or indifferent therapeutically, but they are certainly not "Ichthyol."

It is therefore important to prescribe and insist upon genuine "Ichthyol," if it is desired to obtain dependable "Ichthyol" results.

Dealers in substitutes for "Ichthyol" and its preparations, occasionally use the name "sulpho-ichthyolate" as a term of chemical description, thus to associate their products with "Ichthyol."

It should be clearly understood that "Sulpho-ichthyolate" is not a term of chemical description. There is no such chemical term for the reason that there is no such thing as a well-defined acid known to chemistry called "sulpho-ichthyolic acid." This name thus used is misleading. Like the word "Ichthyol" it is only properly applicable to the preparations derived from the Seefeld product, for it is only by association with that specific product that it acquires any meaning; it, like "Ichthyol," is a term indicating origin and quality only.

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