

cases the discharge becomes purulent and the reddened skin is covered here and there with greenish, foul-smelling crusts which upon removal leave a red, oozing surface. Many cases are associated with varicose veins, part of the leg being the seat of pigmentation of a brown or dark-yellow color, while in other portions, particularly around the ankles, eczema occurs, often surrounding the limb. Complications sooner or later arise in the form of ulcerations which, when once developed, are very sure to recur, especially if the varicose condition is well marked. Eczema never causes ulceration, but this is produced by bursting of the veins and breaking down of the weakened skin. Eczema verrucosum and eczema sclerosum, previously described, result from very long-standing cases in aged people,—cases which have been neglected or improperly treated.

The diagnosis of eczema of the leg is generally easy, the chief difficulty arising when ulceration, pigmentation, and scars complicate the disease. It is often very difficult to differentiate syphilis from an eczema thus complicated and in some instances it is quite impossible to do so. Syphilitic ulcerations, however, are usually multiple and occur most frequently in the middle or upper third of the leg. Scars from syphilis are generally thin, more or less round, and are surrounded by less deep pigmentation than are those which result from varicosities. Scars or other signs of the disease can often be found elsewhere. In women the history of miscarriages, stillbirths, etc., will help to confirm the diagnosis.

The treatment differs little from that of eczema in general, and many of the applications mentioned under local treatment would be applicable in this condition. Dusting powders, evaporating, cooling, and drying lotions, such as calamine, magnesia and zinc, etc., are indicated. When there is oozing and profuse weeping, Kaposi advocates the employment of dilute solutions of acetate of aluminum, to be applied on compresses, while Crocker uses solutions of the lactate or subacetate of lead in the same condition. Salves of boric acid, bismuth, salicylic acid, ichthyol, etc., should be employed after the excessive discharge has ceased. Lassar's paste is a most valuable remedy and the glycerol-gelatin or the "Zinc-Leim" of Unna finds its chief usefulness in eczema of this region. Ichthyol, salicylic acid, boric acid, or any other medicinal agent, may be incorporated with it as the case may require.

Support of the sluggish circulation and varicose veins is of prime importance in the treatment of these cases. When the patients cannot rest the leg, the applications can be made by spreading the salve upon lint and laying it over the diseased area, after which the leg should be firmly bandaged from toe to knee. Dressings should be applied twice daily, the bandage being dispensed with at night. The Martin rubber bandage answers admirably in some cases. It should be applied directly to the leg before rising in the morning and at night it is given a good washing and hung up to dry. Some cooling astringent lotion is then applied and by morning the leg is ready for the bandage again. In some cases the pure rubber sweats the leg excessively and causes pustules to develop. In these, the elastic webbing bandage may be substituted.

**ECZEMA OF THE HANDS AND FEET.**—The eruption is found here in all its typical forms and all the primary types of lesion may be seen at one time or another in the different cases. Thus we may have erythema, papules, vesicles, and pustules, together with the secondary changes, as squamæ, crusts, infiltration, fissures, etc. The disease may be either acute or chronic. In acute vesicular eczema, the sides and flexor surfaces of the fingers or toes and also the palms and soles are the seat of small vesicles, sometimes deep-seated, at other times quite superficial. They are usually more or less grouped and in some cases coalesce to undermine sections of the skin with fluid. At these places the skin eventually peels off, leaving a red, new, thin skin, or one still eczematous, in which the disease presents the characters of a subacute or chronic squamous eczema.

Pustules may occur in the same manner on both the fingers and toes and palmar and plantar surfaces, in which localities they break or dry up into crusts, or form discharging patches. The erythematous, squamous, and papular forms of the eruption may affect the same regions, causing the skin to be dry, red, and scaly, and at the same time there are generally fissures at the flexures of the fingers, toes, or hands and also across the dorsal surfaces.

This type of eczema frequently affects the tips of the fingers, making them dry and fissured and very sensitive and painful at the slightest touch. Squamous eczema of the palms and soles occurs in small patches, scaly, red and fissured, or it may cover the part diffusely with the same dry, red, fissured eruption, extending even on to the dorsum of the member.

The palms and soles, from their special anatomical make-up, present features peculiar to themselves. The thickness of the horny layer determines the character of the lesions when the part is affected with eczema. The skin becomes thickened, hard, rough, and dry either in localized portions or diffusely. Sometimes true callosity exists, and from the great thickness and stiffness of the parts, deep, painful, and bleeding fissures generally develop. As in all the other forms of eczema of the hands and feet, one or both of the members may be affected, but generally the hands and feet are not affected at the same time.

The causes of eczema of the hands and feet are numerous. Many cases of acute vesicular eczema are dependent upon a gouty state of the system or upon a nervous, over-worked, or run-down condition. Eczema of the palms and fingers is often due to the occupation and constitutes in many cases examples of what is described as "trade eczema."

The diagnosis of vesicular or pustular eczema of the hands and feet is sometimes attended with difficulty. It often resembles scabies or the dermatitis produced by the poison ivy or poison oak. Scabies produces, as a rule, larger blisters which are more scattered, usually affecting all the fingers and especially the interdigital spaces. Eczema does not often involve all the digits, and the vesicles or vesico-pustules are more grouped.

The burrows of the itch mite can almost always be found by careful examination, and there would almost invariably be evidence of scabies in the other favorite sites for the disease. Dermatitis venenata, from the *rhus toxicodendron* or the poison oak, is very acute in its onset and course. It covers the hand and fingers and extends beyond them in a very short time, and similar irritative lesions quickly develop upon the face and genitals which would at once distinguish it. The history of exposure to such infection can often be readily obtained.

Syphilis resembles the squamous palmar and plantar forms of eczema very closely at times. Syphilis, however, begins as papules in the form of deep-seated or shotty, red nodules which are arranged in a circular or crescentic form. These coalesce to form a circinate patch, which spreads slowly over one or both palms or soles, even extending over the sides of the part affected. The fissures and scales which sometimes form are like those seen in simple eczema and can scarcely be distinguished from them; the diagnosis must rest mainly upon the method of evolution and the history and evidence of syphilis in other parts. Psoriasis of the palms and soles is so rare that to enumerate the diagnostic points is hardly necessary. It may be mentioned, however, that psoriasis almost invariably presents lesions elsewhere at the same time.

The treatment for acute vesicular or pustular eczema of the hands and feet is the same as that employed for the disease when it affects some other part of the body. Soothing and drying lotions, dusting powders, and protection from soap and water, from irritating substances used in the occupations, etc., are the measures indicated. In neurotic or gouty subjects the proper constitutional remedies, diet, hygiene, etc., should be instituted. In squamous eczema of the palms, soles, fingers, or toes, tar and the mercurials are particularly effective, though

care must be taken not to employ them too strong. White precipitate ointment, citrine ointment, the red oxide and calomel ointments are all useful. For the fingers an ointment of iatrol, ʒ ss.; acid. salicylici, gr. x.; sod. salicylat., ʒ ss.; zinc. oxid., ʒ ss.; and gelanthum, ʒ i., is often effective.

Lassar's paste and Unna's zinc-gelatin paste, with or without ichthyol, are particularly valuable.

In palmar and plantar eczema the thickened epidermis should be first removed by the application of five to ten per cent. salicylic plaster or by means of pumice stone, or by the use of caustic potash, ten to fifteen grains to the ounce. If fissures are present these remedies must be used with care. After the calloused epidermis has been destroyed, ointments of salicylic acid, as the Lassar paste, and those containing thiol, oil of cade, ichthyol, pix liquida, or the various forms of mercury, should be used.

The fissures may be successfully treated by cauterizing with the nitrate of silver stick.

**ECZEMA OF THE NAILS.**—One or several nails may be affected with eczema, but it rarely attacks all at the same time. Generally it concerns the finger nails alone, but occasionally some of the toe nails are simultaneously diseased. The symptoms are those dependent upon defective nutrition of the nail, and this in turn is due to changes in the matrix effected by the eczematous process. Eczema of the finger tips or of other parts generally accompanies the nail disease. The nail loses its lustre, becomes roughened and furrowed, is often distorted and greatly thickened, or it may be covered with small pittings, giving it a honeycombed or worm-eaten appearance. In some cases the nail becomes brittle and flakes off, while in others the thickened mass crumbles at the sides and tip, and gradually wears the nail away to a short stub. The nails are rarely shed entire, however, except in universal and very severe cases of the disease.

Eczema of the nails is to be distinguished chiefly from favus and ringworm and from psoriasis and syphilis. Scrapings from the crumbling portion of the nail, examined by the microscope in equal parts of liquor potasse and glycerin, will reveal the fungus of favus or ringworm if present. Psoriatic and syphilitic nails show no distinctive differences in some stages from those affected with eczema. The physician must rely upon the history, upon the presence of other lesions than those of the nail, and upon the general course of the disease in either case.

The effect of treatment in eczema of the nails is slow. General tonics of arsenic, iron, cod-liver oil, etc., should be given continuously; arsenic alone has but little effect upon the disease. Locally, the nails should be scraped and dipped into extremely hot water for ten or fifteen minutes every night, after which they should be done up in some ointment or oily preparation. The oleate of mercury, five to ten per cent., Hebra's diachylon ointment, the unguentum picis et zinci, the white precipitate or the nitrate of mercury ointment,—any one of these may be used for this purpose. I have found an ointment of resorcin, ʒ ij.; stannic. oleat., ʒ ss.; lanolin., ʒ ij.; and ungt. aquæ rosæ, ʒ vi., of much service in treating eczema of the nails.

In all cases it is advisable to protect the nails with finger cots during the day, whether or not it may be possible to keep an application upon them.

Henry H. Whitehouse.

**EGG, YOLK OF.**—**VITELLUS,** U. S. P. The egg of the common fowl, *Gallus Bankiva domestica* Tern., can hardly be said to be a medicine, although admitted to most pharmacopœias for one purpose or another. Its shell was formerly used as a form of lime salts like oyster shells, coral, etc., but it is now obsolete. The white of the egg, *Ovi Albumen*, is a source of albumen for pharmaceutical and chemical purposes (estimation of pepsin, clarification of solutions, etc.), and a useful antidote to poisoning by corrosive sublimate. It is composed of twelve or fourteen per cent. of pure albumen, and eighty-eight or eighty-six of water, with traces of salts, etc.

The yolk, which alone is official here, is a bright yellow mixture of about sixteen per cent. of *vitellin*, a substance resembling albumen; forty-three hundredths of a per cent. of *cholesterin*; three-tenths of one of *cerebrin*; eight and a half of *lecithin*, a fat-like nitrogenous substance containing also phosphorus; one of *glycerin acids*; twenty-one of *palmitin* and *olein*; a number of saline substances; coloring matter; and, finally, fifty-one of water (Gobley, quoted by Hager). Yolk of egg has considerable emulsifying power for oils and resins, and is official simply on that account. A mixture with glycerin (*Glyceritum Vitelli*, U. S. P.), "*glyconin*," consisting of yolk of egg forty-five and glycerin fifty-five parts, is permanent and very useful in this way. Cod-liver, castor, and other oils, besides some resins and other insoluble substances, are well suspended by it. An egg beaten up alone or with milk, or digested artificially, makes an excellent nutrient enema when such method of feeding is necessary.

W. P. Bolles.

**EGOLS** are a class of stable mercury compounds introduced by Gautrelet. They are brown-red powders, crystallizing in rhombahedra with difficulty, and easily soluble in water. Their solutions are odorless, tasteless, neutral, and non-irritant, and possess marked bactericidal properties. They are said to precipitate toxins, but not to coagulate albumen.

*Phenogol*, the best known, is the potassium nitro-phenol-para-sulphonate of mercury (C<sub>6</sub>H<sub>4</sub>NO<sub>2</sub>.SO<sub>2</sub>K.O)<sub>2</sub>Hg. It contains thirty-three per cent. of mercury, is said not to attack metals but in 0.4 per cent. solution to kill all bacteria, and is claimed to be a valuable substitute for mercuric chloride.

The cresol compound is called *eresogol*, and the thymol preparation, *thymogol*.

W. A. Bastedo.

**EGYPT.**—This country, long known as a winter sanitarium, illustrates the dry warm desert climate, resembling that of Arizona, New Mexico, and portions of Texas and California in the United States. The main characteristics of the climate are: (1) *Warmth*, the mean temperature of Cairo for the winter months being 58.3° F. (2) *Large diurnal variation*, the difference between day and night temperatures varying from 35° to 19° F. (3) *Dryness of atmosphere and small rainfall*. "Six rainy days only in five months were chronicled at Assouan in 1892-93." The difference between the wet and dry bulbs sometimes amounts to 24° F., and the annual relative humidity varies from 58.4 per cent. at Cairo to 45 per cent. at Luxor. (4) *Almost continuous sunshine*. (5) *Great purity of the desert air*. "Meat exposed to the air becomes mummified in three weeks without any trace of decomposition." The general effect of this climate upon the individual is bracing, and at the same time sedative to the nervous system.

The resorts generally frequented by invalids, especially by the tuberculous, are Gizeh (The Mena House), Helouan, Luxor, and Assouan. There should also be mentioned the Nile voyage and camping out. Cairo is to be avoided by the invalid for any lengthy stay, for no large crowded city, even if it possesses the best possible climate, is to be recommended to an invalid, and, further, the sanitary condition of Cairo is not good, and the portion occupied by the European settlement is built upon what was once a swamp and is still in parts swampy. "Moreover, the country around Cairo is most thoroughly irrigated, and the exhalations from the moist land after sunset are extraordinary."\* Since the occupation of Egypt by the English, everything has been established upon a more orderly and stable basis, and doubtless the influence of this is felt, even in the health resorts, in greater attention to the sanitary conditions. The season for visitors extends from October or November to the first or middle of April. Before considering in detail the resorts mentioned and the other means of utilizing the climate, it will be well to discuss the climatic elements, their advantages as

\*Solly: "Medical Climatology."

well as disadvantages, and for this purpose the following simple chart has been compiled from various sources:

CLIMATE OF EGYPT. OBSERVATIONS MOSTLY TAKEN AT CAIRO.

Data.	October.	November.	December.	January.	February.	March.	For year.
Temperature (Fahr.)—							
Average or normal . . .	74.3°	64.4°	58.4°	53.6°	57.0°	62.8°	70.2°
Average daily range . . .	19.2	17.9	17.3	14.8	16.5	20.2	19.7
Mean of warmest . . .	84.0	74.2	67.7	61.4	65.3	73.2	80.1
Mean of coldest . . .	64.8	56.3	50.4	46.6	48.8	53.0	60.4
Highest or maximum . . .	During 1888 the absolute maximum was reached as 111.8° on July 13th. In 1887 it was 110° on June 9th.						
Lowest or minimum . . .	In 1888, the absolute minimum was in January. In 1887 it was 35.2° in January.						
Humidity—							
Average relative . . .	65.8%	67.5%	69.6%	69.7%	66.2%	56.2%	58.4%
Average absolute . . .	.52	.39	.33	.28	.29	.29	.40
Precipitation—							
Average in inches . . .	. . . .	.21	.19	.19	.24	.63	1.22
Wind—							
Prevailing direction . . .	N.	N.	N.	S. W.	N.	N.	N.
Average hourly velocity . . .	3.2	2.1	2.2	2.2	1.4	2.5	2.9
Weather—							
Clouds (0-10) . . . . .	2.5	3.0	3.7	4.1	4.2	3.4	2.6

"In a total of 1,083 observations made during the course of three years, the sky at Cairo was found to be cloudless 709 times; clouds were obtained 254 times, an overcast sky was seen 95 times, and a truly cloud-covered sky was recorded on only 25 occasions."

In the desert and at Luxor clouds are almost unknown. At Cairo, during the winter months, there are only from twelve to fifteen days upon which rain falls.

At Luxor rain is a very rare phenomenon. During five months at Assouan, in the winter of 1892-93, there was blue sky on all but fifteen days.

The most remarkable feature of the Egyptian climate is considered to be the peculiar dryness of the atmosphere, rendering the air bracing and tonic. The relative humidity at Cairo for the year is 58.46 per cent., and for the seven winter months it averages 63.25 per cent. At Gizeh and Helouan it is considerably lower, and still more so at Luxor and Assouan, it being 50.5 per cent. at Luxor.

There is almost complete absence of rain. At Cairo the annual rainfall is 1.22 inches, and the number of rainy days during the winter season (seven months) is twelve. At Luxor there usually is no rain.

"Unless it be in southern and southwestern Arizona, no portion of the United States can be compared with Egypt in the matter of cloudlessness of sky; and it is hardly necessary to add that no such freedom from clouds exists in any part of Europe. This circumstance, taken in connection with the mildness of its day temperature, even in mid-winter, and the comparatively long duration of the hours of possible sunlight (depending upon its southern latitude), marks the whole country of Egypt, and particularly its more southern portion, as that region of the world affording perhaps the best facilities to the invalid desiring to pass as much time as possible in the open air during the cold season of the year. The hours of possible sunshine are much longer in Egypt than in Davos or the Engadine, longer than in Colorado, and even longer than in Southern Arizona; the intensity of the sunlight, especially in Upper Egypt, is probably as great as at any of these places (although we have no data at hand to prove that such is the case); the purity of the atmosphere in respect to the presence of germs, outside of the towns, is probably not far inferior, even in the Nile valley, to that of Colorado, Davos, or Arizona; while in the desert proper it is quite as great. The temperature during the day is higher without being, as a rule, excessive; while by night it is also higher, and, although abundantly cool to be invigorating, is, neverthe-

\* Lombard, quoted by Richards.

less, not more contrasted with the day temperature than is the case in Arizona, Colorado, or Davos. Rain is less frequent than at Davos or in Colorado, and is as infrequent as in Southern Arizona, even at Cairo; and, owing to the absence of clouds, the actual number of hours of sunshine coincides more nearly with the possible number of such hours than is the case in Colorado, Davos, or Arizona. Winds in Egypt are of more frequent occurrence than at Davos during the winter, but probably no more so than in Colorado or in Arizona; while in point of velocity they are probably not higher than in Colorado, although higher than at Davos, and perhaps higher than in Arizona. Absence of statistics prevents an accurate comparison of these resorts in this respect. Violent hot winds, laden with sand from the desert, and exerting a very debilitating influence not only upon men, but also upon animals, occasionally blow in Egypt during the latter part of the winter season. These winds come from the south, and seldom begin to blow before the middle of February; indeed, their time of most frequent occurrence is during a period of fifty days after the vernal equinox, to which circumstance they owe their name, Kamsin. The Kamsin blows, on the average, at Cairo only upon eleven days out of the whole year. The rapid and extreme rise of temperature produced by one of these winds, occurring on May 31st, 1857, is instanced by Dr. Hann on page 443 of his "Handbuch der Klimatologie." The drying effect of the wind is also shown in the figures quoted by Dr. Hann, which figures are given below.

KAM SIN OF MAY 31ST, 1857, AT CAIRO.

Hour.	Temperature.	Relative humidity.	Wind.
7 A.M. . . . .	78.08	54	Calm.
10:30 A.M. . . . .	100.76	19	S.S.W. <sup>2</sup>
Noon. . . . .	103.64	12	S.S.W. <sup>2</sup>
2 P.M. . . . .	105.62	15	S.S.W. <sup>3</sup>
9 P.M. . . . .	95.18	13	Calm.
11 P.M. . . . .	91.4	19	Calm.

"The small figures appended to the letters S.S.W., showing the direction of the wind, probably indicate the velocity in metres per second, a velocity which would be equivalent to 4.47 miles per hour at the hours of 10:30 A.M. and noon, and to 6.71 miles per hour at 2 P.M. Even if these figures are intended to mark the velocity of the wind according to the scale in which 0 represents a calm and 10 a violent hurricane, it is evident that the force of this particular Kamsin wind was not particularly great. At Cairo, the prevailing direction of the wind during the months of January, February, March, and April is stated by Dr. Kisch (Eulenburg's "Real-Encyclopädie") to be as follows: January, northeast; February, northwest; March, west; April, north. Of the winds at Cairo, Dr. Rotureau ("Dictionnaire Encyclopédique des Sciences Médicales") speaks as follows: "The east wind is almost the only one which blows at Cairo during the months of January and February; it lasts from ten o'clock in the forenoon until sunset, and it is against its freshness, often very considerable, that invalids walking out of doors should especially protect themselves. When the east wind is violent, it is almost impossible to go out of doors on account of the clouds of dust which it raises, and which it causes to penetrate even into the most tightly closed apartments. Such a violent easterly wind, however, seldom occurs at Cairo on more than six or eight days out of the whole year. Winds from the northeast, north, and northwest sometimes blow, but never last long enough to be dangerous (n'existent jamais assez longtemps pour être dangereux). The Kamsin, or south wind, does not occur at Cairo until after the middle of February; . . . occasionally (however) it appears earlier," etc. The following quotation respecting the winds of Egypt is taken from the article on "Egypt" in the "Encyclopædia Britannica."

"The wind most frequently blows from the N.W., N., or N.E., but particularly from the first direction. The proportionate prevalence of these winds to those from

all the other quarters, in the year, is about 8 to 3; but to those from the S., S.E., and S.W., about 6 to 1. (Clot-bey, "Aperçu Général sur l'Égypte," i., p. 30.) The northerly winds are the famous Etesian winds of Herodotus (ii., 20), which enable boats constantly to ascend the Nile against its strong and rapid current, whereas in descending the river they depend on the force of the stream, the main-yard being lowered. These winds also cool the temperature during the summer months. The southerly winds are often very violent, and in the spring and summer, especially in April and May, hot sand-winds sometimes blow from the south, greatly raising the temperature and causing especial suffering to Europeans." Several other special winds are also mentioned in this article in the "Encyclopædia Britannica," but none of them requires mention in this place.

"Finally, it should be remarked that a morning fog is a not infrequent occurrence along the banks of the Nile; but such a fog never lasts more than a few hours, being quickly dissipated by the heat of the Egyptian sun.

"On account of the rapidly increasing heat of the spring season, and the especial frequency of occurrence of the Kamsin at that season, it is not desirable that invalids should linger in Egypt later than the month of March, and preferably not later than the middle of this month; owing also to the great heat during the early autumn, and to the prevalence of malarial fevers at that season, it is not well for the invalid to go to Egypt before the middle of November, and for such as intend to make the Nile journey, the middle of December is abundantly early to start. Consequently we see that the season for invalids in Egypt is a comparatively short one, quite as short as at Davos, and considerably shorter than in Colorado. For residence all the year round Egypt is not at all well suited, the summer and autumn heat being far too oppressive. As a sample of the degree of heat which may be experienced in the autumn, it may be of interest to remark that a temperature of 103.5° F. was observed at Alexandria on October 11th, 1877, being the maximum temperature for that whole year, and that the month of October is generally warmer than May at that place, while September is nearly as warm as June (Hann, *op. cit.*, pp. 422, 423.)" (Huntington Richards.)

"During the season in Egypt (October to April) we see from the climatic table that there is no great variation of temperature from day to day, or indeed from month to month, during the five months from November to March. The daily range, however, is great, and there is a very marked contrast between the day and the night temperature, caused by the rapid radiation of heat after sundown from the sands of the surrounding desert.

"Unlike the more irregular falls of temperature, which occur with greater frequency and are apt to be of greater severity in European countries and in a large part of the United States (the land of "blizzards" and "cold waves"), these nightly falls of temperature in Egypt may in great measure be guarded against by the invalid, especially if he have taken up his residence at Cairo. Greater precautions are of course necessary to the invalid who is making the Nile journey on board of a dahabeeah, or who has determined to pass the winter living, like the Arabs, in a tent upon the desert. Flannel underclothing should be worn by all visitors to Egypt, and a supply of warm outer clothing and of wraps is necessary as well, especially for those intending to make the river trip, or to convert themselves temporarily, for the benefit of their health, into amateur Bedouins. Not only is it the decided fall of temperature after sunset against which the invalid must be on his guard, but in addition to this (and depending partly upon it and partly upon the moderate humidity of the Nile valley), the precipitation of dew is very abundant, at least in all portions of Egypt lying in close proximity to the river and its bordering tract of arable land." (Huntington Richards.)

"The drawbacks of a winter in Egypt, as indicated by Dr. Bentley of Cairo,\* are (1) that invalids do not consult

\* British Medical Journal, December 8th, 1894, p. 1300.

a physician until they are attacked with a serious illness. (This drawback unfortunately is not confined to the Egyptian climate.) (2) Ignorance of most invalids as to the nature of the climate to which they resort and apparently the want of appreciation of the real object for which they go abroad. (It is a question if this ignorance is not rather to be ascribed to the home physician.) (3) Opportunities which exist of sightseeing and social gatherings with their attendant evils—over-fatigue, overcrowded rooms, and late hours. (4) Occasional cold high winds, and at times unreliable weather. (5) Sudden and sometimes marked fluctuation of temperature between day and night, sunshine and shade. (6) Hot winds (Kamsin) which commence in February, blow for about two days at a time, and are accompanied by fine particles of sand suspended in the air.

As has been said, Cairo should not be selected by the invalid for a lengthy sojourn. If, however, one is simply desirous of rest and diversion, and is otherwise well, he will find innumerable ways of amusing and forgetting himself in this great Oriental city. For the true invalid, however, and especially for the tuberculous patient, the noise, dust, and attractions of Cairo are to be avoided by selecting either Gizeh, Helouan, Luxor, or Assouan, or by taking a voyage up the Nile, or by camping in the desert. At Gizeh, eight miles from Cairo, is the English hotel, Mena House, on the edge of the desert, affording first-class accommodations, with a resident physician and chaplain, a swimming bath, and arrangements for tennis, croquet, and golf. "The invalid spends his time in the desert, enjoying its invigorating air from morning till night. He may find rest, almost complete immunity from rain, and unlimited sunshine. It is an invaluable health resort for those who wish to avoid the fatigue and expense of the journey up the Nile."\* In December and January the winds are said to be often cold here, and the changes of temperature sudden and great, so that one must be provided with warm outer garments. After sunset, the cold, by comparison, seems severe, and one must be careful to avoid a chill. The temperature is practically that of Cairo, and the humidity lower.

Helouan is fourteen miles by rail from Cairo, situated in the desert, and contains two large and comfortable hotels, numerous pensions, and houses for rent. It is said to have a remarkably dry and sterile atmosphere, and has become not only a favorite locality for invalids but a residential suburb of Cairo. There are hot sulphurous springs at Helouan which "have long enjoyed a reputation for chronic rheumatic affections." The baths are well constructed and resemble those at Aix-les-Bains.

Luxor, four hundred and fifty miles from Cairo, at the first cataract of the Nile, is reached by rail from the latter city, or one can take the slower method of river navigation. It is dryer, warmer, and sunnier than any of the resorts about Cairo; "several winter seasons often pass without a shower" (Thompson). The following table from Sandwith gives the climatic details:

CLIMATE OF LUXOR FOR THE WINTER MONTHS.

Data.	November.	December.	January.	February.	March.
Temperature (deg. Fahr.)—					
Average or normal . . . . .	56.7°	53.7°	56.7°	62.6°	68.9°
Average daily range . . . . .	23.7	23.7	23.7	31.7	38.4
Mean of warmest . . . . .	78.9°	70.6°	65.1	70.6	80.1
Mean of coldest . . . . .	62.1	53.6	41.3	42.4	47.6
Highest or maximum . . . . .	94.0	77.0	83.0	86.0	110.0
Lowest or minimum . . . . .					
Humidity—					
Average relative . . . . .	53.2%	51.0%	51.0%	45.0%	45.0%
Precipitation—					
In inches . . . . .	Minute fraction of an inch, if any.	(Not known.)			
Wind—					
Prevailing direction . . . . .	S. W.	N. E.	N. W.	N. W.	N. W.
Average hourly velocity . . . . .	0.1	1.8	1.0	1.1	0.7
Weather—					
Clouds (0-10) . . . . .	2.9	1.9	2.1	2.1	2.1

\* The sky was noted as being completely overcast four times in January, once in February, and three times in March.

\* Thompson, "The Climate of Egypt," The Practitioner, 1895.

December, January, and February are considered the most available months for Luxor. The town has four thousand inhabitants, with two good hotels and English physicians. "The invalid should not leave the house before 10 A. M. or remain out after sunset." During these three months the bedroom temperature is generally above 63° F. As seen from the table the daily range of temperature is great. The drinking-water, as is generally the custom, comes from the Nile and is filtered. There is much of interest in and about Luxor in the many Egyptian ruins and antiquities.

Assouan is 133 miles higher up the river than Luxor, 583 miles south of Cairo. Besides being warmer than Luxor, its climate is about the same, although the air is said to be freer of dust storms. There is a large and comfortable hotel here, and as rain never falls, the roofs are carpeted, with easy chairs in the shady corners. The air is so dry that the heat is not uncomfortable, and the same clothing is recommended to be worn as in an English winter. Here, as elsewhere, the cool night air is to be avoided.

The Nile voyage is best made between November and March, and one can make the journey either by steamer or dahabiyeh; the latter method is of course the most enjoyable, and weeks may be occupied in making it. The steamers have at least one advantage, that of carrying a physician. "If there is anything in life," says Peterson,\* "which will steal away worries and cares, soothe the tired brain, calm the unstrung nerves, bring back vagrant sleep, it is the dream-like voyage on the Nile in a dahabiyeh." For an invalid, however, particularly if he is suffering from throat or lung trouble, this delightful journey is not without its risks; for the nights are cold and frosty, the mists cover the river in the early mornings, and the wind is sometimes strong and "dangerously cold for an invalid."

Camping in the desert, when this method of life is available, is perhaps the most effectual means of utilizing the advantages of the Egyptian climate. "Our experience of treatment," say Weber and Foster in Allbutt's "System of Medicine," 1896, "by continued residence during several entire years in the Nubian desert under tents shifted from one place to another, has, in several advanced cases of consumption, given results which are altogether superior to any obtained from any health resort or from any other treatment." "Camp life in Egypt," says Peterson (*loc. cit.*), "is something luxurious. Labor and carrying cost next to nothing, and everything in the way of furniture and supplies can be stored away somewhere on a canal. Every day can be foreseen to be rainless and beautiful; life in tents becomes a pleasure."

The diseases for which the Egyptian climate is to be recommended are: (1) Phthisis in the early or advanced cases, if the conditions are not acute; hemorrhagic cases; cases associated with bronchitis. Benefit is said also to be obtained in the first, second, or third stage of the disease, if not acute, especially when the origin of the affection was pneumonic, broncho-pneumonic, or pleuritic. Both C. T. Williams and Sandwith give series of cases with fairly favorable results. (2) Chronic bronchitis and emphysema; asthma. (3) Rheumatism and rheumatic arthritis. (4) Bright's disease and albuminuria. (5) Chronic nasal and pharyngeal catarrh and deafness dependent upon abnormal conditions of the Eustachian tube. (6) Convalescents from pneumonia, pleuro-pneumonia, and pleurisy, and various acute specific diseases. (7) Neurasthenia and cases of mental strain and breakdown. (8) Atheroma and arteriosclerosis. (9) Hemiplegia and paresis. (10) Anæmia. (11) Heart disease. (12) The old and prematurely aged. (13) Neuralgias.

The cases for which this climate is contraindicated are: (1) Intestinal ulceration, chronic dysentery, or any tendency to diarrhoea. (2) Well-marked diabetes. (3) Laryngeal ulcerations. (4) Rapidly advancing and active phthisis. (5) Tuberculous kidneys.

\*The advantage of the Egyptian climate in the treat-

\* Medical Record, August 20th, 1892.

ment of phthisis lies in the warm sunny days, the dryness of the atmosphere, and the aseptic character of the air. Its drawbacks are: the short time of year during which it is available, and the danger of contracting chills, chiefly abdominal" (Weber and Foster, Allbutt's "System of Medicine"). The hygienic-dietetic treatment of phthisis in a well-conducted sanatorium, in almost any temperate climate, where pure air, sunshine, and freedom from dust and wind can be obtained, would probably give a much higher average of favorable results; for the treatment could be continued until the cure had been effected, without change of locality, and, what is of vital importance, the patient would be under constant medical supervision, and would be kept up to the strenuous work of getting well.

The expense of living and travelling in Egypt is greater than in most European countries, but probably no greater than in the United States for the same accommodations, if as great. One can now take a steamer from New York and go directly to Alexandria, or go from London, Plymouth, Marseilles, Naples, Genoa, or Venice. The steamers from New York to Genoa, Naples, or Alexandria are large and comfortable, and going by the "southern route" the voyage is likely to be a smooth one.

For further consideration of the climate of Egypt, one is referred to "Egypt as a Winter Resort," by F. M. Sandwith of Cairo, 1889.—"The Climate of Egypt," by E. Symes Thompson, M.D. *The Practitioner*, 1895, vol. iv., p. 532.—"Notes on Egypt as a Health Resort," by P. Watson Williams, M.D., *Bristol Medico-Chirurgical Journal*, 1895, vol. xiii., p. 262.—"Wintering in Egypt," by Frederick Peterson, M.D. *Medical Record*, 1892, vol. xliii., p. 205. Edward O. Otis.

#### EHRlich DIAZO REACTION. See Typhoid Fever.

**EIGON** is a name given by Dieterich to a series of albumin and iodine compounds of constant composition.

*Alpha-eigon* (albumin iodatum) is an odorless, tasteless, light-brown powder, containing twenty per cent. of iodine, which is set free by alkalies and more readily by acids.

*Alpha-eigon-sodium* (sodium iodo-albuminatum) is nearly colorless, odorless, almost tasteless, and readily soluble in water. It contains fifteen per cent. of iodine, and in four or five times the dose is used to replace potassium iodide.

*Beta-eigon* (peptonum iodatum) is a compound of fifteen per cent. of iodine with predigested albumen (peptone), designed for the easy ingestion of large quantities of iodine in the presence of gastric disturbances. Administered in malt extract, wine, or cod-liver oil, these substances have been used internally in place of iodides in syphilis, scrofula, furunculosis, etc. After long use in large dose, no symptoms of iodine intoxication supervened. Externally, in wounds, boils, and venereal ulcers, Tischer and Beddies found them more effective than iodoform, and preferable on account of the absence of odor. They use it in ten to thirty per cent. strength, diluted with talcum powder. The internal dose is 1 gm. (gr. xv.) three times a day, gradually increased.

W. A. Bastedo.

**EKA-iodoform** is iodoform prepared by electricity and mixed with 0.05 per cent. of paraform. It does not decompose in ethereal solution, but in contact with the tissues generates gaseous formaldehyde. It is recommended as a succedaneum for iodoform.

W. A. Bastedo.

#### ELASTICA.—See Rubber.

**ELATERIN**.—**ELATERINUM**.—"A neutral principle obtained from elaterium, a substance deposited by the juice of the fruit of *Ecballium Elaterium* (L.) A. Rich. (fam. *Cucurbitaceae*)." U. S. P.

This, the wild or squirting cucumber, is a small perennial or, in temperate climates, sometimes annual herb, with a fleshy, tapering root, and succulent, prostrate,

cucumber-like stems. The fruit, which is also official in some countries, where the plant grows, is from three to six centimetres long, by one or two in diameter (1 to 2½ in. by ½ to ¾ in.), oblong, ovoid, covered with fleshy, tapering, soft bristles, and of a yellowish-green color. Texture firm externally, but soft and very watery in the middle. At maturity the tension produced by the accumulation of liquid within the pericarp becomes so great as to burst the fruit at the base, forcing off the peduncle, with a squirt of the soft contents, seeds and all, to a considerable distance. From this peculiar mode of distributing its seeds the plant has received its name (*ἐκβάλλω*). The seeds are numerous, compressed, ovoid, smooth, brown; they also were formerly employed.

This plant is indigenous to Persia, India, and the warmer Mediterranean countries. It has also been naturalized and cultivated in various parts of Europe. It is raised in England and elsewhere for medicinal use. It is a very old medicine, having been mentioned before the Christian era.

The fruit, for medicinal purposes, should be gathered just before it is wholly ripe, and, of course, before it has expelled its contents. It is used to prepare the crude and impure elaterin, which has been long known as *Elaterium* (B. P., also U. S. P., of 1870), and is still the more common article in the markets.

*Elaterium*.—This is a precipitate which forms spontaneously in the liquid juice of the ecballium fruits, and is collected as a sediment from it. The purer and clearer this juice, therefore, the better the precipitate. There are several ways of collecting it, two of the best being as follows: The British Pharmacopœia formerly directed to "Take of the squirting cucumber fruit, very nearly ripe, one pound. Cut the fruit lengthwise, and lightly press out the juice. Strain it through a hair sieve, and set it aside to deposit. Carefully pour off the supernatant liquid; pour the sediment on a linen filter, and dry it on porous tiles in a warm place. The decanted fluid may deposit a second portion of sediment, which can be dried in the same way." Dr. Clutterbuck saved the juice of the sliced fruit, and then scooped the soft pulp out with the thumb, threw it upon a sieve to drain, and washed it with water without pressure. These liquids were set aside, and the precipitate collected and dried as above. This method produced a very fine quality of *Elaterium*, which has been famous for more than half a century. *Elaterium* appears to be good in proportion to the near approach to ripeness of the fruit used, and to the absence of pressure in manipulating it. The continental grades of this article are generally inferior to the English, whose properties are thus given in the British Pharmacopœia:—"In light, friable, flat, or slightly curved opaque cakes about one-tenth of an inch (2.5 mm.) thick; pale green, grayish-green, or yellowish-gray; fracture finely granular; odor faint; tea-like; taste bitter and acrid. It should not give the characteristic reactions with the tests for carbonates or for starch, and should yield half its weight to boiling alcohol (ninety per cent.). When exhausted with chloroform, the solution evaporated, the residue washed with ether, and the process of solution, evaporation, and washing repeated, elaterium should yield twenty-five per cent., or not less than twenty per cent., of elaterin."

The poorer, German elaterium, comes in thicker (about ¼ in.) cakes, largely wanting in the green color and sparkling appearance. It is about one-fourth as strong. The yield of the fruit is about 0.123 per cent. of elaterium. Besides the active principle, coloring matter, cellular tissue, starch, ash, and water make up the rest.

**ELATERIN**.—Discovered by Morris and Hennell, 1831. The most scrupulous care must be taken not to confuse the dosage of this powerful poison with that of the weaker substance described above. This crystalline substance has been adopted by our Pharmacopœia, to the exclusion of elaterium, in consequence of the very uncertain quality of the latter drug. It is also official in Great Britain.

It is a definite chemical combination of the formula C<sub>20</sub>H<sub>28</sub>O<sub>6</sub>, and is thus described in our Pharmacopœia:

Minute, white, hexagonal scales, or prismatic crystals, without odor, and having a slightly acrid, bitter taste; permanent in the air.

Soluble, at 15° C. (59° F.), in 4,250 parts of water, and in 337 parts of alcohol; in 1,820 parts of boiling water, and in 34 parts of boiling alcohol; also soluble in 543 parts of ether, or in 2.4 parts of chloroform.

At 190° C. (374° F.) the crystals begin to agglutinate, and at about 209° C. (408.2° F.) they melt, forming a yellowish-brown liquid. When ignited, they are consumed without leaving a residue.

*Elaterin* is neutral to litmus paper. *Elaterin* is dissolved by solutions of the alkalies, and reprecipitated on supersaturating with an acid.

When dissolved in cold, concentrated sulphuric acid, it causes the latter to become yellow at first, which color gradually changes to scarlet.

On dissolving some crystals of elaterin in melted carbonic acid, and then adding a few drops of strong sulphuric acid, a crimson color will be developed which soon becomes scarlet.

An alcoholic solution of elaterin should not be precipitated by tannic acid T.S., mercuric chloride T.S., or platonic chloride T.S. (absence of, and difference from, *alkaloids*).

**ACTION AND USE**.—*Elaterin* is the most active and certain of known hydragogue cathartics, purging repeatedly and comparatively painlessly in exceedingly minute doses. In larger ones, colic, nausea, vomiting, and prostration may follow. It is especially indicated when there is no inflammatory trouble in the digestive tract, and it is desirable both to empty the latter of its contents and to secure a copious transudation of water from the blood to its canal. Such conditions are frequently present in cardiac and renal diseases, accompanied by general dropsy; occasionally also in ascites from various causes, and in cerebral congestion, plethora, concussion, or compression of the brain, etc. For all these there is no better hydragogue than this. To be efficient, it should be given by the mouth, as it is very much less active in injections either into the rectum or into the cellular tissue; and inunction it scarcely produces any but local effects. It is said, further, that the presence of bile in the intestines is essential to its full effect; but the proposition can scarcely be considered as finally settled. It is, no doubt, necessary that the intestinal contents should be alkaline.

Upon dogs, rabbits, and some other animals, it is an uncertain cathartic, and may even kill by nervous depression, without moving the bowels at all. After death by it, in man, signs of gastro-intestinal inflammation have been present.

**ADMINISTRATION**.—*Elaterium* is very variable in its strength, and while of Clutterbuck's or the best English the dose is about a centigram (gr. ¼ to ½), that of the ordinary Malta or German varieties may be five or six times as large. In an untried sample, the smaller dose should always be started with and increased until found to be sufficient. **ELATERIN** is uniform, and should supersede the impure substance just mentioned. Dose 0.0015 to 0.006 (gr. ¼ to ½). The officinal trituration (*Trituratio elaterini*, U. S. P.), strength 1/10, is a convenient form. Dose, 0.015 to 0.06 gm. (gr. ¼ to 1).

*Elaterin* should always be given well diluted.

W. P. Bolles.

**ELBOW**.—**Extent**.—The term elbow is often used to indicate merely the angular projection made between the arm and forearm. The region of the elbow includes the joint and all the parts that surround and cover it. Externally there are no well-marked lines that separate this region from the arm above or the forearm below, and the rule established by Tillaux of limiting its boundaries to two finger-breadths above and two below the transverse cutaneous fold caused by the flexion of the joint, is probably as good as can be devised.

**Configuration**.—(See Fig. 1814.) In shape this region differs from those above and below, being somewhat broader, flatter, and hollowed in front by a shallow de-