

Several symptoms require special treatment. For the anæmia, beside the usual iron preparations, bone marrow (well tolerated when frozen as a kind of ice-cream) may be administered, and oxygen inhalations are useful. Of the effect of the newly exploited cacodylic acid on the anæmia of this disease I have no knowledge. The attacks of perisplenitis call for rest in bed and are best relieved by the local application of cold, preferably the ice-water coil. Painting with iodine, mercurial inunctions, and the faradic current have also been made use of to reduce the size of the spleen.

Other disturbances should be treated as they arise, it being always borne in mind that we cannot look for a cure of the disease, and therefore that we must make the patient's comfort, for the remaining short term of his life, our first consideration. *Theodore C. Janeway.*

LEVANT FEVER. See Malta Fever.

LEVICO.—Two mineral springs and a village bear this name, in Tyrol, Austria, just north of the boundary line of Italy. The town has about 6,000 inhabitants and is situated at an elevation of 1,700 feet above sea-level, on a large mound of shale at the southern slope of Monte Fronte and Monte Canzana. It is surrounded by the beautiful mountain scenery of the southern Tyrolean Alps, in the picturesque valley of Valsugana, a little more than an hour's ride by rail from Trent. A short distance up the valley, at the end of a rather steep ascent, are two beautiful lakes, Caldonazzo and Levico, the source of a small rivulet, the Brenta, which flows down the valley, and, after attaining considerable size, crosses the Venetian plain, to empty into the Bay of Venice.

The mineral springs issue from two grottoes in the side of Monte Fronte at an elevation of fully 3,000 feet above the sea. They are known as the Vetriolo and the Oera (or Ocker), and, in reference to the comparative strength of their waters, as the weaker and the stronger. The most remarkable feature of the waters is that they contain considerable quantities of iron, arsenic, and manganese, in addition to many other mineral salts. Some analyses show also free acids. One thousand parts have been found to contain:

	Vetriolo.	Oera.
Cupric sulphate.....	0.0470	
Ferric sulphate.....	4.3210	
Ferrous sulphate.....	0.2390	0.4008
Manganese sulphate.....	Trace.	
Aluminum sulphate.....	.8428	
Magnesium sulphate.....	.1504	.2630
Calcium sulphate.....	1.0520	.1320
Sodium sulphate.....	.0120	
Arsenious acid.....	.0008	.0009

There are also small quantities of the oxides of iron, aluminum and manganese, and some free carbonic acid gas.

The water has been found beneficial in all conditions for which iron and arsenic are indicated, hence in the different forms of anæmia, chlorosis, neuralgia, and other nervous affections, especially hysteria, neurasthenia, and chorea, in skin diseases, in uterine and ovarian affections, and in gastro-intestinal disorders.

At the springs, only the weaker water is administered internally, the stronger being used for bathing. Both are generally diluted with pure spring water in proportions prescribed by the attending physicians. Both waters are bottled, however, and are on sale in all parts of the world. The patient is directed to begin with one tablespoonful of the weaker water, well diluted, or a third as much of the stronger, morning and evening. The dose is increased every third or fourth day until three tablespoonfuls are taken after each meal.

In the bathing institutions at Levico there are, in addition to the ordinary baths, all facilities for special hydrotherapy, massage, and all forms of electrical treatment. *James M. French.*

LEVULOSE. See Sugar.

LEYSIN, SWITZERLAND.—This mountain village is a high-altitude resort, 4,150 feet above the sea-level, situated in Western Switzerland at the junction of the Ormont and Rhone valleys, a few miles from the eastern end of Lake Geneva. It is easily reached from Paris by rail to Lausanne and Aigle, and thence by diligence and an electric road.

Pulmonary tuberculosis is the principal disease treated at this resort, although the climate is recommended for bronchial asthma, chronic bronchitis, anæmia, convalescence from pneumonia and pleurisy, neurasthenia, tuberculous conditions in children, and obstinate dyspepsia. The climate is favorable for a continuous residence the year through. The peculiarities of a high-altitude climate, such as have been described under Davos and elsewhere in the HANDBOOK, are exhibited at Leysin: a comparatively dry, pure atmosphere, a large amount of winter sunshine, freedom from mists and high winds, and intense solar radiation, characteristic of the attenuated air of altitudes. The meteorological data are similar to those given under Davos. The average winter temperature, however, is somewhat higher than that at Davos, ranging from a minimum of 21.7° F. to a maximum of 35.6° F. at 7 A.M., and from a minimum of 25.8° F. to a maximum of 39.1° F. at 10 A.M. The lowest temperature observed was -2° F. The sun temperature in winter is between 86° F. and 122° F., while the ordinary temperature is between 32° and 50° F. The mean relative humidity for the five winter months, November to March inclusive, for the three winters 1887-90, was 61.9 per cent. There are on an average from five to five and a quarter hours of sunshine a day, though the possible daily insolation is, of course, greater. The total number of hours of sunshine for the five winter months from 1887-90, was as follows: 1887-88, 482.70 hours; 1888-89, 601.05 hours; 1889-90, 737.6 hours, or a little over four hours a day.

In the four years 1887-90 the percentage of calm days (absence of wind) was 81. Wind, therefore, is the exception. The prevailing direction of the wind is from the southwest and southeast. Fog or mist is rare.

Leysin, then, well fulfils the conditions of a high-altitude health resort, which are: (a) purity of the atmosphere; (b) dryness; (c) absence of wind; (d) intense insolation; (e) low temperature; (f) diminished barometric pressure.

Above the village of Leysin, which is itself situated on a plateau, is the plateau of Feydey, 610 feet higher, and here is situated a sanatorium with a large annex. To the north, northeast, and northwest rise chains of mountains which afford protection from the winds blowing from these directions. The sanatorium is situated on the border of great forests of fir trees which clothe the mountain sides. In front of the sanatorium is a great terrace looking toward the south, and affording a wide and extended view. This sanatorium, which with its annex, has one hundred and forty chambers, is equipped with all the appliances for modern sanatorium treatment, and is under skilful medical direction. The tuberculous who are most likely to improve in this, as in all high-altitude health resorts, are those whose general condition is good, and in whom the involvement of the lungs is not too extended or active, as indicated by continuous pyrexia. The best time of the year in which to begin a residence in Leysin is in August or September.

As has been mentioned above, the "cure" can be continued the year through, though for those who spend the winter in the south Leysin affords a favorable summer climate. There are many attractive mountain excursions about Leysin, and in the winter there are skating and tobogganing. There are Catholic and Protestant churches, shops, and attractive chalets which can be hired for the season. The postal and telegraphic facilities are good.

To one desiring to take the high-altitude cure in a well-conducted sanatorium and at the same time gain a knowledge of French and French people, Leysin can be recommended. *Edward O. Otis.*



FIG. 3193.—Sanatorium of Leysin (4,800 feet above sea-level).

LIBERTY, SULLIVAN COUNTY, NEW YORK.—Sullivan County occupies a position near the summit of the eastern water-shed of the Delaware River, south of the Catskill Mountains at a point where the boundaries of New York, New Jersey, and Pennsylvania meet. The country is beautiful, hilly, but not wild; it is devoted to dairy farms and supports a prosperous community. There are no large bodies of water near, no swamps or stagnant water-courses, and rapid drainage gives to the air a dryness not found in the lake region or at the seaboard. The soil in the lower levels is a loam with a moderate amount of clay, but on the hillsides it is more porous. The range of temperature is great; there are usually four months of sleighing, the snow which falls in November remaining dry and hard through March. The mean annual temperature is 44° F., and the mean annual rainfall about fifty inches.

The death rate for Sullivan County and for Delaware County adjoining is the lowest in the State, being about one-third that of New York City. The native population is of hardy Dutch stock with very little foreign blood.

The neighboring towns of Liberty Falls, Fallsburg, Woodburne, Youngsville, Parksville, Neversink, Monticello, and Hurleyville, although not quite so high as Liberty (elevation 1,600-2,200 feet), share in great measure its natural advantages and are attractive for summer residence.

As a winter resort Liberty is attractive. There are about one hundred hotels and private houses that afford accommodations during the summer. Access is by the New York, Ontario, and Western Railway in about four hours from New York.

Liberty was selected by the late Dr. Alfred L. Loomis

as the site of the sanatorium which now bears his name. This institution was opened in 1896 and has been liberally equipped for the treatment of tuberculous patients. There are two departments: one for patients paying from fifteen to thirty dollars weekly, and a charitable annex for patients paying five dollars weekly. Special arrangements can be made for private cottages and suites. There are at present nineteen buildings with a total capacity of 125. Only those patients are desired who are in the early stages of consumption, and to whom a residence of a number of months in the sanatorium promises a complete cure or such an improved condition that they can return to their homes and be able to carry on their work. Both men and women are admitted. Patients are required to remain at least eight hours a day out of doors unless excused on account of sickness or during rainy weather. Climate is not wholly relied upon in the treatment of patients, for use is made of appropriate medical treatment as well. There is, in connection with the sanatorium, a training school for nurses which educates them in ministering to the special needs of tuberculous patients.

Liberty has acquired a wide reputation for the treatment of pulmonary tuberculosis on account of the success of this sanatorium, but during the past year local sentiment has been aroused against the consequent influx of visitors having this disease. The village authorities have passed a regulation prohibiting the maintenance of any institution or house for the reception of patients having tuberculosis within the limits of the village. The Loomis Sanitarium, at a distance of two miles from the station, does not fall under this restriction.

Guy Hinsdale.

LICHEN.—The term lichen, as applied to diseases of the skin, has, until comparatively recently, been loosely given to a variety of cutaneous eruptions, characterized by itching papules of a chronic type. Reminders of this loose nomenclature are found in the terms, still occasionally employed, lichen tropicus (miliaria rubra), lichen simplex (eczema papulosum), lichen urticatus (a variety of erythema exudativum multiforme), and lichen scrofulosorum.

French writers of to-day use the term lichenification to describe a condition of the skin found as a sequel to long-continued inflammations of various sorts. It is characterized by the appearance, particularly at the various joints, of small, flat-topped papules, resembling more or less closely those of lichen planus. It is not a definite disease, runs no characteristic course, and in this country would be considered merely a form of papular eczema.

As now understood, the term lichen includes two diseases only, and the identity of these two has been affirmed by some dermatologists. The first variety, lichen planus, is not extremely rare, but is by no means one of the common diseases of the skin. The second, lichen ruber acuminatus, is one of the most infrequent of the dermatoses. Typical cases of these diseases are markedly different from one another, but atypical cases are sometimes seen, which present characteristics of both.

LICHEN PLANUS.—A typical case of lichen planus begins upon the flexor surfaces of both forearms, or upon the sides of the abdomen, with moderate itching or tin-

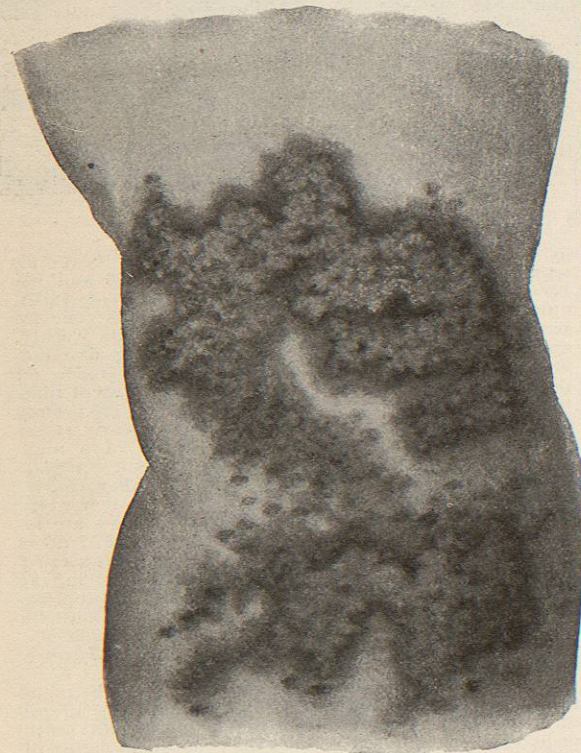


FIG. 3194.—Lichen Planus. (A. R. Robinson.)

gling sensations, followed in a few days by an eruption of small, flat-topped, thickly clustered, highly distinctive papules. They are fairly uniform at first, each being

of about the size of the head of a pin. Each is separated from the others by normal skin. But their most striking characteristics are their color and shape. At first dull crimson in hue, they later assume a violet, purple, or lavender tint, which is so different from that of any other eruption that the diagnosis may often be made from it alone. The shape of the papules, too, is highly characteristic. Each has a flat top, with just the suggestion of a dimple near its centre, and perpendicular sides, with angular corners. Another feature of the individual papule which attracts attention is a peculiar waxy sheen, especially noticeable when viewed from one side.

The disease does not continue indefinitely to retain its original discrete character, for there is a decided tendency for the papules to grow in size, until some are as large as a bean, and consequently they crowd one another for space. When two papules meet, they coalesce into one, and thus often patches are formed, of most irregular outline, corresponding to the angular edges of the outermost papules. Sometimes finger-like projections from the main patch will extend beyond its border, and almost always some discrete papules of the original type will be seen outlying. The waxy appearance of a patch thus formed is very characteristic, as is the violaceous color. Sooner or later, however, the waxy roof is apt to be replaced by a delicate layer of the whitest scales, glistening and very thin, but there is never the abundant desquamation seen in psoriasis.

Other localities than those mentioned may be first affected, or be attacked later, notably the sides of the neck, the penis, and the lower limbs. The disease is even sometimes found upon mucous membranes, where it generally takes the form of white spots or streaks. The face is usually free from the disease. Young adults are the most frequent sufferers. Sometimes the earliest papules, instead of being as small as the head of a pin, are larger, and rarely the papules are so thickly clustered from the first as to form practically one patch.

Lichen planus is usually, but not always, a symmetrical disease. It generally itches, and sometimes this symptom is a most annoying feature. Rarely, however, is the itching severe enough to cause the patient to lacerate his skin by scratching, as is the case with eczema.

The disease is a chronic one, but has an inherent tendency to recover in the course of a year or two. As it approaches a cure, the color of the patches becomes darker, the elevation is less marked, and eventually only a brown stain is left, which disappears slowly.

Upon the lower limbs, and occasionally elsewhere, one sometimes sees the phenomenon of the patches losing their distinctive characteristics and becoming verrucous.

Etiology.—The causes of this disease are shrouded in mystery. Usually it is seen in youth or middle age. Its symmetrical character, and its occasional linear arrangement, suggest a nervous origin. Digestive and uterine disturbances have, in individual cases, been assigned as causes. In the majority of cases, however, no cause can be determined.

Pathological Anatomy.—The pathological conditions found upon microscopical examination of individual papules may be summarized as a cellular infiltration into the corium, generally about a sweat duct, followed later by a marked thickening of the rete.

Diagnosis.—Lichen planus is liable to be confounded with eczema, psoriasis, or syphilis. From eczema it is distinguished by its sharp outline and angular configuration, by its color and the waxy appearance of its roof, and more especially by a study of the outlying papules. From psoriasis it differs in showing no tendency to clear up in the centre, in its location upon flexor instead of extensor surfaces, in its comparatively slight scaling, and in its color. From a superficial tubercular syphilide, which might be suggested by the general arrangement and color of a patch of lichen planus, the latter disease is to be distinguished by its failure to leave scars or to clear up in the centre, by its unresponsiveness to specific treatment, and by the absence of other signs of syphilis.

Treatment.—The treatment of lichen planus is very

unsatisfactory, since we do not know its cause. Any error of health, especially any nervous derangement, must receive especial attention. Digestive disturbances and

A typical case begins with a profuse eruption of pin-head-sized papules, scattered quite generally over the entire body. Each papule is firm, and capped with a little epidermic plug of horny consistency, so that when the finger is passed over a surface thus affected the patch feels like a nutmeg grater. Each papule is pink or red in hue, and all are of about the same size. In some localities, such as the flexures of the joints, the abdomen, the sides of the neck, and the middle of the back, the papules are more thickly aggregated than elsewhere. The individual papules do not grow larger, but the eruption of similar papules continues, until in some places they are so crowded together as to give the impression of one broad lesion. When this condition is reached, the skin is much thickened, and, in places where there is much motion, as in the flexures of the joints, deep and painful fissures may form. Over such a patch, a peculiar desquamation finally occurs, thin, snow-white scales being gradually cast off and replaced by others.

Not all portions of the body undergo this characteristic change, for in some places the thickening of the integument is the main feature, and the desquamation is not very noticeable. Upon the face and hands, the thickened skin finally seems to undergo absorption, leaving an atrophic condition behind, with a tendency toward contraction. Upon the palms and soles, the skin is greatly thickened. The integument now resembles parchment, the eyelids may be everted, the fingers bent like claws.

From the first, itching, more or less pronounced, is almost always present. The patient becomes emaciated and weakened as the disease progresses, and finally, in most cases, dies of exhaustion.

This severe type of lichen ruber is not often observed in America, but a milder form of the disease, which the French call pityriasis rubra pilaris, has been not infrequently seen. It begins in the same way as the severe form, but when it has reached the stage of agglomeration into patches, many of the individual papules located outside the main lesions become absorbed. Then the general surface presents a reddened, slightly scaly appearance, resembling that of chronic eczema, and this is especially noticeable upon the face and hands. Upon the trunk or limbs are one or several of the



FIG. 3195.—Lichen Planus. (A. R. Robinson.)

sexual disorders should be set right. But these suggestions are equally applicable to the treatment of all diseases of the skin. In the beginning of lichen planus, when the disease is acute, alkaline diuretics, and soothing applications, such as lotio nigra, calamine lotion, and Lassar's paste, will modify its intensity. In chronic cases, arsenic, pushed to the limit of tolerance, and aided by stimulating applications, such as green soap, tar (10 to 20 per cent.), carbolic acid (5 per cent.), and bichloride of mercury (0.1 per cent.), will hasten the disappearance of the eruption.

LICHEN RUBER ACUMINATUS.—The second disease mentioned above, lichen ruber acuminatus, was first described by Hebra as a necessarily fatal affection. Further observation has established the fact that a milder form exists, which, while exceedingly chronic, may result in recovery.

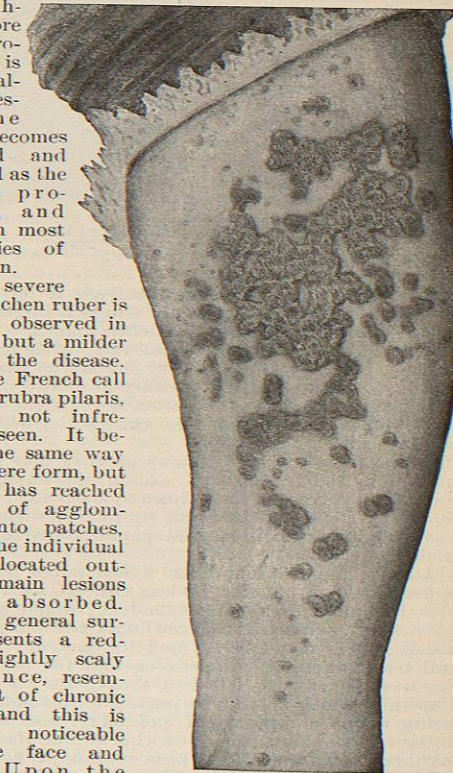


FIG. 3196.—Lichen Planus. (A. R. Robinson.)