Very rarely the vesicles occur upon the mucous membrane of the nose or the female genitalia. In rare cases, they develop earlier upon the mucous membranes than upon the integument.

v. Baerensprung[1] first observed hypertrophy of the sebaceous glands as a sequel of pemphigus. In like manner, it may be followed by an enormous development of furuncles.

Etiology.—The causes of pemphigus are unknown. It occurs not infrequently in vigorous individuals, and cachectic symptoms do not appear until the disease has lasted for a long time.

In a case in which the clinical diagnosis of herpes iris (pemphigus?) was made, and which terminated fatally, with acute decubitus over the sacrum and inflammation of the lungs, Jarisch[2] discovered anatomical changes in the spinal cord. He found macroscopic changes in various parts of the gray axis, particularly in the central, lateral, and posterior portions of the anterior horns. The changes consisted of inflammatory appearances of the ganglion-cells (swelling of the processes of the cells) and the fibrous interstitial substance. Dejerine[3] and Leloir found changes in the peripheral nerves in pemphigus, the fibres being degenerated in the vicinity of fresh vesicles, while empty sheaths, with increased nuclei, alone remained underneath old vesicles.

Vesicles often appear upon the anæsthetic spots of leprosy, in which the nerves have undergone anatomical changes.

We may regard as reflex those cases of pemphigus which are produced by changes in the genital organs, particularly of women, such as the cases of recurring pemphigus in pregnancy, and the pemphigus hystericus (Hardy) of uterine anomalies. In a child Startin observed vesicles upon the arms and legs as the result of round worms, and the former disappeared after the discharge of the worms. Kœbner[4] calls attention to the similarity of pemphigus to herpes and urticaria and assumes an irritation of the vaso-motor nerves and a certain predisposition of the skin as the cause of pemphigus. v. Baerensprung[5] believes that it is a primary affection of the blood, like the exanthematic processes, and that the blood is not affected in its entire mass, but only in certain vascular districts. The assumption of a toxic origin is made when the vesicles follow septic processes, surgical measures, puerperal processes, ulcerative endocarditis, uræmic poisoning after scarlatina, after the administration of certain drugs (arsenic, iodide of potassium, bromide of potassium, salicylate of soda).

Purulent vesicles not infrequently occur repeatedly upon the lower limbs of enfeebled individuals, who are bed-ridden from some other disease.

Anatomy.—The formation of the vesicles occurs by the separation of the stratum granulosum from the stratum lucidum. When they have attained a certain size, they contain no meshes and have a single chamber; occasionally there are nipple-like projections from the inferior surface of the roof of the vesicles, corresponding to the epithelium cells discharged from the follicles.

The contents of the vesicles vary greatly, containing serum, pus, and epithelium cells. Jarisch[6] found its specific gravity 1.0196, water 941.9 parts, solid matters 58.1

[1] Ann. d. Charité, Vol. x., p. 101.
[2] Sitzungen d. k. k. Akad. d. Wissensch., III. Abth., Bd. 81. Mai, 1880.
[3] Gaz. d. Hôp., 1876, p. 835. In a paralytic old woman.
[4] Arch. f. Dermat., 1869, S. 218.
[5] Ann. d. Charité, Vol. x., p. 99.
[6] Sitzungsber. d. k. k. Akad., Abth. III., 1879, S. 59.

parts; it contained serum albumin, paraglobulin, and a little fat. The ashes contained chlorine, sulphuric acid, phosphoric acid, carbonic acid, potash, soda, oxide of calcium, oxide of magnesium. in all 0.84% ashes. Urea and fat were also present, but no free ammonia.

The rete cells which form the floor of the vesicle are flattened in their upper layers, the nuclei being retained; the papillæ show vascular injection, the vessels are somewhat dilated, the connective-tissue network is looser. In pemphigus foliaceus Neumann[1] found the connective-tissue bundles of the cutis thickened, the rete cells clouded by finely granular masses, the sweat-glands enlarged and filled with necrotic cells, their excretory ducts dilated, the horny layer imperfect.

Tubercular changes were found in the other organs in fatal cases and also chronic degeneration of the kidneys, waxy degeneration, pneumonia.

Diagnosis.—The contagious pemphigus of the new-born and children must be distinguished from, 1, the ordinary, non-contagious form, which occurs in children, though more rarely; 2, syphilitic pemphigus, which is confined chiefly to the palms of the hand and soles of the feet; the vesicles are usually purulent, the skin presents a brownish-red infiltration upon which the vesicles have formed, or there is merely separation of the skin upon an elevated base. Other specific symptoms (coryza, exanthems, anæmia) are usually present.

We must be on our guard against simulation, for which purpose cantharides is hiefly employed. The shining scales of the Spanish fly which can be detected upon the wall of the vesicle and its vicinity, are indubitable evidences of simulation.

The superficial position of the vesicles, their recovery without cicatrices, with a smooth pigmented skin, the never-failing relapses distinguish chronic pemphigus from the specific ulcerative processes associated with the formation of vesicles or large pustules.

The general condition of the patient must always be taken into consideration in making a prognosis. The occurrence of typhoid symptoms with abundant formation of vesicles is of very unfavorable significance, both in the acute and chronic forms of pemphigus.

Treatment.—Acute contagious pemphigus neonatorum requires isolation, the greatest cleanliness, good nourishment, the prevention of disturbances on the part of the intestinal tract, the application of powdered snbstances, lukewarm baths. Acute simple or contagious pemphigus requires, according to the severity of the general disturbances, merely symptomatic treatment with quinine, roborants, etc. Locally we may apply powdered hygroscopic substances and bandages with ointments.

The most important indications in chronic pemphigus are, 1, to keep the nutrition of the patient in the best possible condition; 2, to relieve the annoyances caused by the vesicles, by the use of bandages, the water-bed, dusting powder, etc.; 3, to prevent septic complications from absorption of purulent substances from the vesicles by cautiously opening them; 4, to prevent inanition if the mouth is affected. The first indication is fulfilled by the administration of tonics and bitters, such as iron, quinine, etc., nourishing diet, wine, and, if the mouth is affected to a marked extent, even feeding by the ectum.

Hutchinson[2] has observed entire recovery in several cases of pemphigus after treat-

[1] "Lehrb. d. Hautkrankh.," V. Aufl., S. 243.
[2] Med. Times and Gazette, 1875, Vol. ii., p. 461.

ment with arsenic. Devergie recommended ferr. sesquichloratum, 6–8 drops t. i. d., in sugar water, v. Baerensprung the internal application of chlorate of potash. With regard to the second indication, many authors emphasize the injurious effects of baths, while Hebra employed water advantageously in various ways, such as cold douches and baths, hydropathic packs, a water-bed (*i. e.*, constant stay in water of the temperature desired). Devergie and Hebra also recommended baths with corrosive sublimate, 4.0–10.0 per bath, with caustic potash, 50.0, with carbonate of soda, 100.0–150.0; also the application of the oil of cade and a subsequent prolonged bath. Hillairet recommended linimentum calcareo-oleosum and the application of cotton, *i. e.*, the same treatment as in burns. In other cases, the application of dry dusting-powders is sufficient. Disinfecting or astringent gargles may be used profitably to meet the fourth indication.

CHEIROPOMPHOLYX.

Under this name, J. Hutchinson described a disease the severer forms of which occur chiefly in women. It begins with itching and burning in the fingers, and in a few (two) days vesicles develop rapidly and symmetrically in the integument of the fingers and vola manus, looking like swollen grains of sago. Larger vesicles are also present. The feet are often affected in the same manner, but usually somewhat later than the hands. A temporary erythematous eruption (rash) and pruritus occasionally develop over the body at the same time. The vesicles form without any inflammatory symptoms, and their contents disappear in a short time. The disease is followed at times by a peculiar change in the nails;[1] they are undermined and break in the vicinity of the root. Relapses always occur in this affection. It occurs almost exclusively in adults, particularly in nervous individuals,[2] but sometimes in vigorous persons, during and after protracted mental activity. The contents of the vesicles at first are neutral, later acid; sulphuric acid produces a whitish precipitate.

Anatomy.—Robinson[3] gives the following description of the microscopical appearances. The collection of serum takes place between the upper layers of the rete Malphighi (stratum granulosum ?), and the rete-cells forming the floor of the vesicle are flattened, in places elongated. The roof of the vesicle, formed of rete-cells, has a variable thickness. There are no changes in the papillary vessels. The formation of the vesicles corresponds to the arrangement of the papillæ; the smallest vesicles coalesce into larger ones by the atrophy of the intervening cellular wall. The clear fluid contents are rendered opaque, at a later period, by an increasing number of round cells, the papillary vessels become dilated, and a round-cell infiltration occurs in the papillæ. The layer of horny cells becomes macerated, although the roof of the vesicle does not burst, and insensible evaporation of the contents thus occurs. The rete layers on the floor of the vesicle are also infiltrated with round cells in the later stages. There is no change in the subcutaneous connective tissue or the sweat-glands. These appearances combat the term dyshidrosis chosen by T. Fox for this affection. T. Fox and R. Crocker[1] found dilatation and marked sinuosity of the execretory ducts of the sweat-glands; the vesicles formed in the papillary layer of the rete, and here and there were connected with the sweat-glands; the vesicular contents consisted of granular and cellular masses. In some places, the coils of sweat-glands were enlarged.

Diagnosis —Hebra regarded this disease as a vesicular eczema, but it is distinguised from this disease by its restriction to the parts mentioned, and by the relapses and more marked nervous phenomena.

Treatment.—As the disease recovers spontaneously, symptomatic treatment of the pruritus is alone indicated.

[1] Thin, British Med. Journ., Dec., 1877. Liveing, ibid.

[2] The following must be regarded as abnormal cases of cheiropompholyx: A woman sufferlng from nervous hemicrania was affected with lancinating pains in the inner side of the right middle finger. A large vesicle soon developed, followed by several relapses in the same place (Behse, Petersb. Med. Ztg., 1869, Bd. x., S. 321). Rendu (Ann. de Dermat., Vol. vi., p. 201, Obs. 34) reports the following case: A woman is affected from time to time with chilliness, malaise, temp. 39–40°, at intervals of one to two weeks. After the fever, marked redness develops in the hands and lower limbs, with tension, throbbing, sensitiveness, and burning, as in erysipelas. General diaphoresis occurs during the painful œdema. Soon afterwards, vesicles of various sizes, arranged chiefly in groups, appear symmetrically upon the palm of the hand, sides of the fingers, the lower limb, and inner side of the foot; they are filled at first with serous, later with purulent contents. They persist for two to three days; then the skin becomes pale, crusts form, and marked desquamation. Lymphangitis occasionally develops later, sometimes with suppuration of the glands.

[3] Arch. of Derm., Vol. iii.. p. 291.

IMPETIGO HERPETIFORMIS (HEBRA). HERPES GESTATIONIS.

The disease described by Hebra as impetigo herpetiformis belongs to the series of pemphigoid affections, as a connecting link between acute pemphigus and the chronic form (pemphigus foliaceus). Hitherto it has been observed exclusively in women during pregnancy.

Milton[2] reports a case in which during several pregnancies (in the fourth month) bright-red, slightly elevated plaques, from the size of a pea to a walnut, appeared upon the inner side of the arm; pointed vesicles, usually in groups of two to four, were often situated upon the patches. The violent pruritus gave rise to insomnia. The contents of the vesicles soon became cloudy, and the affection rapidly extended over the trunk and the other limbs; general malaise and great irritability were also present. Premature delivery occurred during the sixth month. New pustular eruptions developed after delivery, but complete recovery occurred soon afterwards. E. Wilson[3] reported a similar case.

H. Auspitz[4] described a fatal case under the term herpes vegetans, because here, as in certain cases of pemphigus, papillomatous proliferations formed in some of the affected spots. J. Neumann published a similar case, but without any proliferation, under the name herpes pyæmicus. Hebra[5] applied to the disease the term impetigo herpetiformis, on account of the clinical appearances. Pustules develop in bunches, occasionally vesicles with contents which become cloudy; these become incrusted. Under the desquamated crust the skin appears reddened, destitute of its horny layer, shining, occasionally moist, but never ulcerated; secondarily, the tense, somewhat infiltrated skin may fissure in various places, especially around the joints. By the development of new groups of pustules upon other parts of the body, and the extension of the pustular process in the neighborhood of a group already present, the affection spreads over the larger part of

[1] Med. Times and Gazette, 1878, T. i., p. 632.

[2] Journ. of Cutan. Med., Vol. i., p. 311.

[3] "Skin Diseases," 6th ed., p. 294.

[4] Arch. f. Derm., 1869, S. 246.

[5] Wien. med. Wochenschr., 1872, No. 48; and "Lehrbuch," II. Aufl., Bd. i., S. 654.