

wound. In fact, at the end of four months she had visibly gained in flesh and I had every reason to expect a favorable result. But at about the beginning of the fifth month after the operation, the patient developed a slight paresis of the left hand and leg; two weeks later the body temperature suddenly rose to 106° F. Further operative interference revealed a softening of the superficial brain structure, near the outer wound, but no abscess was discovered. The patient sank gradually, and at the end of another two weeks died. No autopsy was allowed, but the brain was explored through the wound of the operation. No abscess was found, but the lining of the lateral ventricle was covered with a purulent exudate; in all likelihood this condition extended throughout the whole ventricular system of the brain.

In all probability the abscess, in the case just narrated, was situated in the posterior portion of the first temporo-sphenoidal convolution. As regards the operation it seems to me that it would have been better if I had entered the cranial cavity below the parietal eminence. If I had done this I would not have found it necessary to remove the bone over the tympanic roof nor the lateral wall of the middle fossa, for a distance of over half an inch above the linea temporalis; and, besides, I would have left a smaller area of brain surface unprotected by bone.

The infection, in this case, evidently spread from the middle ear to the antrum, and thence to the cortex of the mastoid process, where it caused the formation of a subperiosteal abscess which extended forward as far as to the parietal eminence and even a short distance above it; it then spread to the bone in the region situated below the parietal eminence, causing a necrosis which extended from the outer table of the bone to and through its inner table; it then finally invaded the dura mater (pachymeningitis and an extradural abscess), causing necrosis of the portion invaded, and eventually involving the cerebral structures themselves (abscess of the brain).

II. *Septic Sigmoid Sinus Thrombosis.*—In cases of septic sigmoid sinus thrombosis the surgical measures required are the following: The mastoid operation having been completed in the manner already described in the earlier part of this article, the sinus wall is to be gradually removed by the use of a broad curette, and, when an opening has been made in the wall, it should be enlarged upward and downward with a pair of rongeur forceps. The sinus should be exposed for a sufficient distance beyond the knee, so that, if it should become necessary to introduce a curette at this point, there would be no obstructing curve to interfere with its use. In the downward direction the sinus should be exposed to view as far as the jugular bulb (see Fig. 3329). Near the bulb the operator must proceed cautiously, in order that he may avoid wounding the facial nerve in front of it; he must also remember that the foramen lacerum posterius does not give exit, from the skull, to the jugular vein alone, but that it also affords a passage, through its anterior portion, to the glosso-pharyngeal, the pneumogastric, and the spinal accessory nerves. The inferior petrosal enters the sigmoid sinus immediately above the jugular bulb.

As soon as the wall of the sinus has been fully exposed to view the question at once presents itself, Does it or does it not contain a thrombus? Unless the clot is large enough to occupy the entire lumen of the sinus canal, this question is a very difficult one to answer. From palpation alone it may be impossible to determine whether fluid blood is present or not; and it is practically useless to endeavor to make a diagnosis by aspiration of the sinus; for if the clot is centrally located the trocar will be likely to push it to one side, or if it hugs the wall of the vein the instrument will pass entirely through it. In either case, therefore, only fluid blood is likely to be obtained. It is therefore generally necessary to make the diagnosis from the general and the local symptoms alone (see Vol. III., p. 658). In some cases, however, the symptoms are not sufficiently marked to enable the surgeon to make a positive diagnosis. When this is the case he will

be compelled to make a small incision in the sinus wall, the blood current being shut off above and below by the fingers of an assistant. If no clot is found, a simple pressure tampon will control the bleeding, and this tampon may be removed in the course of a few days. On the other hand, if a clot is found the sinus should be opened from a point a little above the jugular bulb to one situated a short distance above the knee, the bleeding during this procedure being under the control of the assistant. The curette is then introduced into the sinus through the incised opening and directed toward the torcular. At the instant when this is done, the assistant should cease to make pressure upon the sinus, thus permitting the surgeon rapidly to curette the interior of the vein in the direction named. In carrying out this part of the operation it is permissible to use a fair degree of firmness in scraping the external wall of the sinus, but a more delicate touch is necessary when the pressure is applied against the internal wall—that which lies next the cerebellum. Free bleeding is allowed for a few seconds so that the blood current may wash out any small particles of clot that may have escaped the curette. An iodoform gauze tampon (placed over, not in the sinus) is used to control the hemorrhage; if it should be inserted into the lumen of the canal it would hold it open, and when it became necessary to remove it the withdrawal of the tent would be likely to pull the clot out with it and so cause a recurrence of the hemorrhage. The mode of procedure recommended for the upper portion should also be applied to the jugular end of the sinus. The wound is then to be dressed as after a mastoid operation. If the wall of the sinus is found to be necrotic, as much of the diseased tissues as possible should be cut away. Very little pressure is required to control the hemorrhage; that exerted by the usual packing of gauze and by the outer dressings is all that is required.

III. *Ligation and Excision of the Internal Jugular.*—This is the last of the series of operations which the surgeon may have to perform in order to rescue a patient from the fatal effects of an inflammation of the middle ear. The patient is placed on the operating table with the shoulders raised and the head turned to the opposite side; this sharply defines the anterior border of the sterno-cleido-mastoid muscle, which is the guide to be followed by the surgeon in cutting down on the vein. The neck should of course be thoroughly cleansed and the field of operation rendered aseptic. The incision in the skin extends from the sterno-clavicular articulation to a point midway between the angle of the jaw and the mastoid process. It is carried through the superficial fasciæ and the platysma myoides muscle. On reaching the deep cervical fasciæ the surgeon should do whatever further dissecting may be needed, with the handle of the scalpel, or with some other blunt instrument, rather than with the cutting edge of the knife. The latter is to be used only where the tissues are too firm to be torn apart. The branches of the superficial cervical nerve and of the external jugular vein are encountered in the course of the operation. About two-thirds of the way down the neck, and beneath the sterno-cleido-mastoid muscle, is the omohyoid muscle, which must be drawn down out of the way. Some small vessels are encountered, and if they get in the way, they should be ligated and divided. The jugular vein lies in the same sheath with the internal carotid artery and the pneumogastric nerve, and is covered by a fibrous sheath which also constitutes the posterior wall of the sheath of the sterno-cleido-mastoid muscle. The muscle is retracted and this sheath is divided and then opened throughout its entire length. The vein, it must be remembered, is very thin and easily punctured, especially if distended. It usually lies to the outside of the artery, the nerve lying between the two. At times the vein is collapsed and so small that it is difficult to find.

When the vein has been freed throughout this entire length its branches are next to be tied off (*i.e.*, the facial, the superior and middle thyroid, and the lingual veins). The internal jugular is then to be tied at two different

points—one a little above its union with the subclavian vein, and the other at its upper end. At each of these two points two separate ligatures are to be placed around the vein, which is then to be divided at each of these points; the knife (guided by a director, which at the same time protects the surrounding structures from injury) passing between the two ligatures in each case. The division is to be made at the lower point of ligation first, and the vessel is to be carefully dissected out from its bed until the upper point of ligation is reached. At this point the vein is again to be divided and the expected portion entirely removed. Under no circumstances should this infected part of the vein be allowed to remain behind. If there has been no sloughing of the sinus, and if no pus is present in the wound, it may be entirely closed with sutures, or a drain may be placed at either end or at both ends, and the usual dressings applied.

Jansen (*Archives of Otolaryngology*, vol. xxx., p. 367), in a discussion on otogenous sinus thrombosis, in which the question of whether or not the jugular vein should be ligated before or after the opening of the sinus, or at all, constituted the most important point discussed, promulgated the following rules:

Ligation of the jugular vein is done—
I. As the first step of the operation: (1) in undisputed cases of jugular phlebitis; (2) in septicæmia.
II. After exposure of the sinus: (1) if the sinus appears healthy, having no perisinos affections, but being accompanied by rigors and marked oscillations of temperature indicative of a marked septicæmia; (2) in periphlebitis and parietal thrombosis under the same conditions.

III. After incision of the sinus: (1) if the septic thrombus is or was situated in the immediate neighborhood of the jugular bulb; (2) if, after the incision, the rigors do not cease, nor the temperature decrease materially.

The sinus is opened (1) when there is evidence of a septic disintegrated thrombus; (2) in gangrene of the sinus wall; (3) in repeated rigors, with marked oscillations of temperature and poor general condition; (4) when there is neuritis optica.

The weight of opinions as well as the weight of statistics would lead one to believe that the above-mentioned rules for guidance in these cases are very judicious, being neither too conservative nor too radical.

Randall (*University Medical Journal*, October, 1900), in an article entitled "A Review of Surgery, with Special Reference to Operation for Phlebothrombosis of the Lateral Sinus" and containing a most excellent summary, draws the following conclusions: Shock should be forestalled by avoiding loss of blood, by maintaining the body temperature, by the injection of a hot saline solution, and by the rapid use of the chisel, curette, and the rongeur with the minimum use of the mallet.* Metastases already formed, even in the lungs, are not necessarily contraindications for operation, since the secondary foci are generally less virulent and may heal. Brain abscess, especially in the cerebellum, should be constantly watched for, and may yield to prompt evacuation. Leptomeningitis alone seems to preclude recovery; and yet, in some cases, the symptoms of this serious complication may promptly disappear after operation.

The carotid artery and the bulb of the jugular vein because of their displacement forward into the tympanic cavity, have, in a few rare cases, been wounded in operations upon the drum membrane or in the middle ear. Bruhl mentions a case in which the carotid canal almost reached to the promontory of the middle ear. If this accident should occur, packing with iodoform gauze may control the hemorrhage, and continued pressure over the carotid will assist in the formation of a clot.

In cases in which the internal ear is the seat of a purulent inflammation, the labyrinth will have to be opened

* The inhalation of oxygen, especially in septic cases or in those in which the lungs are involved, is an excellent sustaining measure.

and drained; and if sequestra of the bony labyrinth exist, they will have to be removed. Robert Lewis, Jr.

LITERATURE.

Broca: The Surgical Anatomy and Operative Surgery of the Middle Ear. Buck: Diseases of the Ear. Bacon: Manual of Otolaryngology. Bruhl and Politzer: Atlas and Epitome of Otolaryngology. Macewen: Diseases of the Brain and Spinal Cord. Jacobson and Steward: The Operations of Surgery. The Archives of Otolaryngology, The Journal of Laryngology, Rhinology and Otolaryngology, and various monographs by different authors.

MATCHLESS MINERAL WELLS.—Butler County, Alabama.

Post-Office.—Greenville. Hotels in Greenville.

These wells, two in number, are situated two and one-half miles from Greenville, a pleasant little town of about 4,500 inhabitants, in the pine region of Alabama. Greenville is located on the main line of the Louisville and Nashville Railroad, forty-four miles south of Montgomery. The following somewhat remarkable analysis of the water of these wells is said to have been made by Profs. E. A. Smith and J. B. Little, and to have been indorsed by Prof. Henry W. Leffmann:

ONE UNITED STATES GALLON CONTAINS:

Solids.	Grains.
Sulphuric acid	314.09
Ferric oxide	86.33
Ferrous oxide	81.38
Calcic oxide	24.53
Magnesian oxide	22.71
Potassic oxide	1.11
Alumina	3.65
Silica	5.04
Sodium oxide	4.09
Chlorine	2.47

Total solids..... 545.60

Carbonic acid undetermined. Specific gravity of water, 1.007.

This analysis shows the water to be a powerful chalybeate. It is bottled, and is said to have an extensive sale in the South. The water is recommended for dyspepsia, diarrhoea, anæmia, general debility, etc. As a local application it is used in indolent ulcerations and hemorrhoids, as an injection in gonorrhœa and vaginitis, and as a spray or gargle in throat affections. The dose as a tonic is one or two drachms three times a day, diluted with plain water; as a cathartic, six, ten, or twelve drachms in an equal quantity of water.

James K. Crook.

MATÉ.—YERBA MATÉ. PARAGUAY TEA. The dried leaves of *Ilex Paraguensis* St. Hil. (fam. *Illiciaceæ*). The plant yielding this important article is a shrub or small tree, growing both wild and cultivated in the country for which it is named, and in other parts of South America. The leaves are evergreen, lanceolate or oblong, blunt, and sparsely serrate. For use they are collected, dried, and generally broken into fine fragments.

It is not a drug in the proper sense of the term, but a beverage substance, being drunk in South America as a substitute for tea, for the sake of its one-half to one and one-half per cent. of caffeine. With this there occur about fifteen per cent. of tannin and a trace of volatile oil, so that the resemblance to tea is very close. It is the staple beverage of millions of people, who are quite as fond of it as any people are of other beverages, and it has the advantage of being very cheap. Various spasmodic attempts have been made to introduce it abroad, as a cheap substitute for tea, for the poorer classes, but they have not succeeded. At the present time (A. D. 1901), a much more powerful and sustained commercial attempt is under way, which bids fair to succeed. In doses about double those of tea, the characteristic action of theine or caffeine is to be obtained.

Henry H. Rusby.

MATICO.—"The leaves of *Piper angustifolium* R. et P. (fam. *Piperaceæ*)" (U. S. P.). This plant is a large shrub or small tree, growing upon the eastern slope of

the Bolivian Andes, and probably in Peru, at an elevation of 4,000 to 6,000 feet, the belt inhabited by the cinchona and coca plants. It is said to grow also in southeastern Brazil, but this is doubtless a distinct species. Several other species are collected and sold for it. The following is the description of the plant:

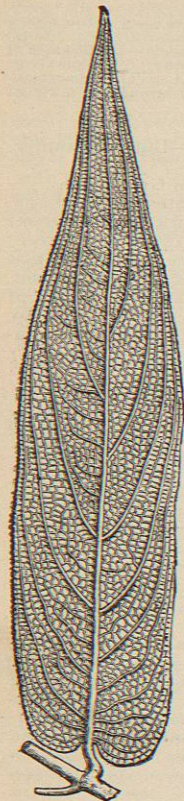


Fig. 3333.—Leaf of Matico Plant. (Bailon.)

Leaf from 12 to 20 cm. (5 to 8 inches) in length, very shortly and stoutly petioled, oblong-lanceolate, with obliquely cordate base, its lobes rounded, and a long acuminate, acute summit; margin entire or obsoletely crenate; bullate above, finely cancellate underneath, the veins densely brownish-hairy; odor faint; taste aromatic, pungent and bitterish. The flower spikes, which are frequently present, are about a fourth of an inch in diameter and two-thirds as long as the leaves. This distinguishes it from a spurious species often sold for it, the leaves being decidedly shorter and relatively broader and the spikes only about half as long and relatively thicker.

Matico contains from two to three per cent. of an essential oil, which is distilled for the market. It is yellowish-brown, of characteristic odor, and has a specific gravity of about .93. Its important constituent is the stearopten, which has been called "matico camphor" ($C_{12}H_{20}O$). The oil of the flowers is similar but has a specific gravity of 1.13. With the oil, there is considerable resin and tannin, and an amaroid, as well as *artanthic acid*.

The essential oil is a powerful abdominal stimulant, contracting the vessels in serous diarrhoea and in intestinal hemorrhage, in which action it is aided by the tannin. It has also been used locally as a hæmorrhagic, and as an ordinary vulnerary. It also possesses the ordinary properties of a bitter tonic. Its chief use, especially in France, has been as a substitute for cubeb and copaiba in the treatment of gonorrhoea and cystitis, but it is inferior to them, especially to the latter. We have official the fluid extract, dose 2 to 6 c.c. (fl. 3 ss.-iss.), and a ten-per-cent. tincture, made with diluted alcohol, the best use of which is as a stomachic, in doses of $\frac{5}{3}$ ss.-i. *Henry H. Rusby.*

MATZOÖN. See Milk.

McCALLISTER'S SODA SPRINGS.—Jackson County, Oregon.

POST-OFFICE.—Lake Creek. Camping grounds.

ACCESS.—Via Southern Pacific Railroad to Central Point; thence by private conveyance over a fair wagon-road twenty-five miles east to springs.

McCallister's Springs are located in a picturesque mountain region, 5,400 feet above the level of the sea. This region is noted for its pure, dry atmosphere and its freedom from miasmatic diseases. The springs are two in number, and flow about 120 gallons per hour each. The water has not yet been analyzed. We are informed by Mr. J. G. McCallister, the proprietor, that the waters have a wide reputation among the residents of the surrounding country in the treatment of chronic malarial poisoning. It is said that malaria is unknown in the neighborhood, and almost every person suffering from fever and ague is relieved after a few days' stay at the

springs. We may easily believe, however, that these good results are at least partially due to the bracing mountain air of the neighborhood. The place is much resorted to by dyspeptics and rheumatic patients. The water is always cold, and is said to possess excellent properties as a tonic and appetizant. *James K. Crook.*

MEASLES.—(Synonyms: Morbilli, Rubéola; Ger., *Masern, Flecken*; Fr., *Rougeole*; It., *Rosalia*; Sp., *Sarampion*.)

DEFINITION.—Measles is an eruptive contagious fever. It is characterized by a period of incubation, of invasion, of eruption, and of decline. Its peculiar symptoms are manifested upon the skin and mucous membranes. It is highly contagious and, as a rule, attacks an individual but once.

HISTORY.—There is no evidence that measles was recognized as a distinct disease before the time of Rhazes (A.D. 900). Although this writer described measles and smallpox together, he probably appreciated their differences. Late in the tenth century Avicenna described measles, but it was not until the close of the seventeenth century that this malady and scarlatina were definitely determined to be separate affections, when Sydenham and Morton (1670-74) declared the latter to be a disease *sui generis*. Thenceforth descriptions of measles became more clearly defined, and to-day its literature is very voluminous. The origin of measles is buried in obscurity. At present its distribution is almost world-wide; only the remotest corners of the earth have remained exempt from its ravages. It appeared in America soon after the arrival of the first settlers, and advanced steadily with the pioneers of civilization. It did not reach Oregon until 1829, or California and Hudson's Bay Territory until 1846. Greenland, as late as 1864, had not been invaded by it.¹

CLINICAL HISTORY.—*Typical Course.*—Stage of Incubation. Although it has been asserted by Vogel and others that for several days after infection the contagious principle remains absolutely quiescent, it must be concluded that an attack of measles begins at the moment when its specific influence is brought to bear upon the body of its recipient. Though not demonstrable and, certainly, so far as our present methods of research enable us to determine, quite without immediate appreciable results, this influence continues and grows until it acquires a force capable of upsetting the equilibrium of the economy and of initiating characteristic symptoms. The interval included between the date of infection and that of the outbreak of symptoms is called the *period of stage of incubation*. This period varies between seven and twenty-one days; very rarely it may be more brief than seven days, or prolonged beyond twenty-one days. Panum, whose opportunities for observation, during an epidemic of measles in the Faroë Islands, were unusually good, determined that the eruption occurred thirteen or fourteen days after infection. This would give a period of incubation of from nine to ten days. Girard,² in one hundred and eight cases of measles, determined that the exanthem appeared in from thirteen to sixteen days, never earlier, never later; in only three cases was it as late as the sixteenth day. This would correspond to an incubative period of from nine to twelve days. Chomel taught that the eruption may appear as early as seven days after infection, and in many cases may not appear until after fifteen days. The results of inoculation of unprotected individuals, with the tears and catarrhal secretions of persons affected with measles, are, as might be supposed, somewhat different. The inoculations practised at Edinburgh, in 1758, by Home, with the blood of infected persons, have been repeated with blood, tears, mucus, epidermic scales, etc., by different experimenters, with varying results. Katona failed in only seven per cent. of eleven hundred and twenty-two inoculations.³ Prodromal symptoms began in his cases on the seventh day. The difficulty of discovering the exact time of infection necessarily renders the determi-

nation of the duration of the stage of incubation very uncertain. Many instances of apparently protracted incubation are to be explained by the fact that the individual became infected only after repeated exposures. It may be concluded that most cases develop prodromal symptoms on the ninth or tenth day after infection. These will rarely appear on the seventh or eighth day, somewhat more frequently on the eleventh or twelfth day, and only exceptionally, after more prolonged intervals or earlier than the seventh day.

Stage of Invasion.—This stage may begin abruptly with fever, or it may be ushered in by gradually developing evidences of disturbed nutrition. Anorexia, nausea, headache, general malaise, shiverings may accompany or follow symptoms of conjunctival, nasal, and bronchial catarrh, during which the fever will become manifest. Although it has often been claimed that vague signs of disorder accompany the incubative stage, it is usual for the invasion to be marked by a sudden onset of fever, in which, during the first day, a temperature of from 39.1° C. to 40° C. (102° to 104° F.) will be attained. Wunderlich has shown that this preliminary elevation of temperature "allows us to forecast the subsequently occurring elevations with very great probability, since these, on an average, are wont to exceed the height of the initial rise by about 0.8° to 1° C. (1.5° to 1.8° F.), and only exceed this a trifle even when most extreme."⁴ Catarrhal symptoms develop almost immediately; indeed, the implication of the mucous membranes is the characteristic feature of this stage. The mucous membranes of the eyes, nose, and throat, of the larynx, trachea, and bronchial tubes, and sometimes of the digestive organs, become almost simultaneously affected. The conjunctivæ are injected and reddened, a free discharge of tears follows, shortly succeeded by a scanty muco-purulent formation about the tarsal borders, which is more free in scrofulous persons. More or less photophobia will be developed. Monti has drawn attention to the small red spots visible along the ciliary border. The eyelids become somewhat reddened and swollen. Königsten has declared the conjunctival hyperemia to be a specific effect of the measles contagium, and not simply catarrhal. Sneezing and snuffling, which are often the first symptoms observed, indicate hyperemia and inflammation of the nasal mucous membrane. A thin watery discharge from the nose is also present. After a day or two this becomes mucopurulent. The membrane is seen to be reddened, and inspired air excites a painful, burning sensation. Cough denotes the involvement of the respiratory tract, and is intense, usually, in proportion to the severity of the attack. It is at first dry and troublesome, but afterward becomes associated with secretion. Croupy cough and respiration sometimes occur and denote swelling of the tracheal and laryngeal mucous membrane. Rarely, œdema of the glottis may suddenly develop and threaten life, or call for tracheotomy. Nausea, vomiting, and total loss of appetite indicate perturbation of the gastric mucous membrane, and the frequent appearance of diarrhoea denotes the occurrence of intestinal catarrh. The buccal cavity does not usually show pronounced alterations. The tongue quickly becomes coated with a thin whitish fur, through which the papillæ penetrate. From the first there are often pain and difficulty of swallowing, and the faucial mucous membrane assumes a more vivid coloring; and by the end of the second day careful inspection will detect small blotches of irregular outline and deepened color upon the hard and soft palate. Girard asserts that a punctate redness is visible on the palate from four to six days before the eruption. Due attention has only of late been given to the condition of the mucous membrane in this stage. The posterior wall of the pharynx is more intensely reddened than the arch of the palate. From twelve to twenty-four hours before the appearance of the cutaneous eruption, an eruption invades the palatal mucous membrane. The efflorescences are irregular, varying in size from that of a pin-head to that of a hemp seed or a lentil, and are isolated or confluent. They are sometimes papular. These le-

sions grow pale after from twelve to twenty-four hours. The buccal mucous membrane is sometimes similarly affected; that of the tongue, however, is never invaded.⁵ While the eruption is most copious upon the soft palate and uvula, it has been observed upon the general visible surface of the respiratory and digestive tracts, and its existence at this time justifies the opinion expressed by Hardaway and others, that it would be better to designate the period of its development as the stage of the "exanthem of the mucous membrane." The throat is felt by the patient to be dry, and the cough, which constantly grows in intensity, may have a metallic ring and may be accompanied by decided hoarseness. Sibilant and sonorous, and, occasionally, subcrepitan râles, may already betray bronchitis. Not infrequently the symptoms become complicated with epistaxis, which rarely becomes alarming. Nervous agitation may now be extreme, or the child may remain dull, inattentive, or somnolent. Convulsions not very rarely appear, but, when observed thus early in the disease, are not often of grave augury.

The fever, which may have developed with the symptoms described, or may have preceded them, becomes in a few hours quite intense, in severe cases attaining a temperature of from 39° to 40° C. (102.4° to 104° F.). An exceptional case is reported by Hunter (*British Medical Journal*, 1898, i., p. 1134) where the fever, which was 107° F. before the rash appeared, after four days rose to 110° F., was accompanied by unconsciousness and followed by convulsions; the patient, a child, was treated with the cold pack and recovered. Vomiting and severe frontal headache often accompany the fever. The child will be fretful and peevish, or may remain drowsy and apathetic. All the symptoms enumerated may be of an exceedingly mild character, may even escape observation, or they may rapidly develop a high degree of intensity. Once developed, they continue unabated until the end of the second or beginning of the third day, when in most cases there will be a sudden amelioration. Indeed, fever may quite disappear, and delusive hopes of an immediate recovery may be entertained. The child will regain some of its gayety of manner and will play about the room at times. The catarrhal symptoms, however, will in most cases persist, though with diminished vigor. This period of apparent improvement is very deceptive, but by careful consideration of all concomitant phenomena, the experienced attendant will learn to avoid error. During the third day the fever will increase and remain unabated, while the appearance of the cutaneous eruption will usher in the next stage. The high temperature of the stage of invasion is not again equalled until the acme of the disease, which occurs toward the close of the second day of the eruption. Careful consideration of the symptoms, of the course of the fever, of the development of the catarrh, the coughing and sneezing, the lachrymation, the injection of the conjunctivæ, and especially of the efflorescences upon the faucial mucous membrane, will often justify a very confident surmise as to the true nature of the disorder before the cutaneous eruption appears.

Koplik's Sign.—Dr. Koplik, of New York,⁶ has recently (1896) drawn attention to "buccal spots" of characteristic appearance and much diagnostic value. These are now generally known as "Koplik's Spots," or "Koplik's Sign," and the account here offered is taken from his writings. "Scant attention has been given to the most important elements of the eruption as it appears on the mucous membrane of the inside of the cheeks and on that of the lips. A thorough understanding of the eruption on the buccal mucous membrane will aid in separating an invading measles from a mass of eruptions resembling measles which appear on the skin in infancy and childhood. Any positive sign of the invasion of any infectious or contagious disease is a step to proper isolation and prophylactic hygiene.

"If we look in the mouth at this period (first twenty-four to forty-eight hours of the invasion), we see a redness of the fauces; perhaps, not in all cases, a few spots on the soft palate. On the buccal mucous membrane