hours. Fomentations of the solution are constantly applied after the bath. (*Medical and Surgical Reporter*, October, 1867.)

**Aqua Picis* was extensively used by the Confederate surgeons during the war, with very excellent results. They claim that by its free use as a local disinfectant, the powerful caustics often recommended were not needed. Prof. L. A. DUGAS, of Georgia, introduced it.

Baptisia Tinctoria. A decoction of the wild indigo, ℥j to aquæ Oj, in dose of f.℥ss every four or eight hours, has been asserted to be extremely useful in threatened or existing mortification. It is also used externally as a cataplasm.

**Brominium* is one of the most efficient agents in hospital gangrene. (F. 25.)

Carbo. Charcoal poultices have been recommended, but are of doubtful efficacy.

Carbolicum Acidum, applied pure to the gangrenous surface, is a very effectual caustic.

Chromicum Acidum, in the strength of 100 grains to the ounce of water, has been recommended as a local escharotic in hospital gangrene.

Ferri Persulphas is an excellent remedy for local use.

Hydrargyri Nitratis Liquor. The favorite remedy for hospital gangrene with Prof. S. D. GROSS has always been the acid nitrate of mercury, freely diluted with water, and applied with a soft mop.

Iodinium. In *chronic gangrene*, the best local remedies are the dilute tincture of iodine, brushed very thoroughly, twice a day, over the whole of the affected surface, and the use of the bandage applied with moderate force, and kept constantly wet with a solution of opium and acetate of lead, or of muriate of ammonia. (GROSS.)

Lacticum Acidum has been recommended by Professor SAMUEL JACKSON, of Philadelphia. Buttermilk has been found very useful as a wash.

Nitricum Acidum has been employed as a cauterant. It is needlessly severe.

**Opium.* As remarked by Professor GROSS, the great constitutional remedy in hospital gangrene is opium in some form. It should be given in large doses in union with a diaphoretic (ipecacuhana.)

Oxyyen. In the Parisian hospitals benefit has been reported by maintaining the limb in an atmosphere of oxygen. A caoutchouc bag is fastened around the limb, and then, through a stop-cock, filled with the gas.

Potassii Permanganas. This substance was employed in hospital gangrene, both internally and externally, by Dr. HINKLE, of Penna., with excellent effect. He gave by the mouth grs. j–ij, in solution, and externally used a concentrated solution as an escharotic, applying it thoroughly after the part had been well cleansed, and using as a dressing lint soaked in a weaker solution.

Saccharum. Powdered white sugar dusted upon the raw surface was found by Dr. JOHN S. PACKARD, of Philadelphia, to be extremely useful.

Salicylicum Acidum has been employed, but it is inferior to carbolic acid.

**Terebinthinæ Oleum.* Dr. R. BARTHOLOW has pointed out that turpentine is one of the most efficacious agents in hospital gangrene. The mortified parts are first removed with the scissors, and the remedy is then applied directly to the affected surface, by means of a piece of cotton cloth saturated with it Fetor is removed, and sloughing arrested, and but little pain attends the application. He also recommends its internal use, gtt. x every three hours.

HEMORRHAGE.

The therapeutical means for the control of surgical hemorrhage include (1) arterial sedatives, (2) astringents, and (3) styptics.

The arterial sedative of first importance is *repose* of the part and of the system. The bleeding part should be elevated, and motion avoided. Arterial action may also be much diminished by position, and forced flexion, as previously directed in the treatment of inflammation. (See page 18.)

A full dose of *opium* after serious loss of blood will greatly aid in maintaining a tranquil circulation, and prevent the recurrence of hemorrhage. Dr. GROSS states that "it is surprising that this remedy is not more generally employed than it seems to be."

Of nearly equal value, especially when considerable arterial excitement is present, is *veratrum viride.* One of the surgeons in the late war writes: "An extended experience with veratrum during eighteen years assures me of its great value in abating and even warding off *inflammation, and in controlling hemorrhage.* Hæmoptysis, hæmaturia, metrorrhagia, gastric hemorrhage, all yield with a facility which it has not been my fortune to experience with my other medical agents whatsoever. During the late war, I was in the habit of thus controlling the pulse for the purpose of preventing secondary hemorrhage. In one such case, the exhibition of veratrum, during ten days, at my suggestion, rendered an amputation below the knee unnecessary, which was barely escaped by the patient, and had been decided upon by the attendant surgeon."

The internal use of *astringents* is called for in cases of passive hemorrhage, when without arterial excitement there is strong tendency to oozing of blood, consequent on the hemorrhagic diathesis, on relaxation of the vasa-motor system, or else on some disease of the circulatory vessels. Of these the most efficient are *ergot* and *acetate of lead.* They should be given in large doses, frequently repeated. The

urtica urens has long enjoyed a reputation as controlling passive hemorrhage. Dr. J. E. GARRETSON, of Philadelphia, recommends the tincture of *Erigeron Canadense* in single-drop doses each minute. He has found it very useful in epistaxis, internal hemorrhage, &c.

The rule in the use of *styptics* is, that where we can arrest the hemorrhage by compression, position or ligation, they should not be employed. (BILLROTH.) In parenchymatous bleeding from the face, neck or perineum, we may resort to styptics with advantage, if it makes no difference whether the wound suppurates subsequently; but if the hemorrhage be considerable, and the styptics fail, subsequent ligation is much more difficult, as the wouud is often so much smeared by the previous applications.

As *contra-indications* to the local use of styptics, Dr. WARING enumerates the following: Inflammation; active hemorrhage; inflammatory diarrhœa; an excessive mucous discharge, attended by inflammation; rigidity of parts; extensive external injuries. In these cases, the local application of astringents will not only fail to arrest the hemorrhage, but may excite excessive irritability or inflammation of the surrounding tissues.

DR. B. W. RICHARDSON, OF LONDON.

In the *Medical Times and Gazette*, 1867, this physician suggested a hæmostatic preparation, which under the name of "RICHARDSON'S *styptic colloid*," has achieved considerable popularity. The directions he gave for preparing it are as follows:

The object to be arrived at is to saturate ether entirely with tannin and colloid substance, xyloidine or gun-cotton. In the first step of the process, the tannin, rendered as pure as can be, is treated with stronger alcohol, and is made to digest in the alcohol for several days. Then stronger ether is added, until the whole of the thick alcoholic mixture is rendered quite fluid. Next, the gun-cotton is put in until it ceases readily to dissolve. The solution is then ready for use. It can be applied directly with a brush, or mixed with an equal quantity of ether; or in the form of a spray. This styptic is deodorant, excludes the air from every point of the wound, thus preventing oxydation and irritation, checks the oozing of blood, holds the parts in apposition, and soothes the pain of the wound.

CARBOLIZED STYPTIC COLLODION.

126. ℞.	Collodion,	100	parts.
	Carbolic acid,	10	"
	Tannin,	5	"
	Benzoic acid (from gum),	5	"

Mix the ingredients in the order above given, and agitate until perfect solution is effected.

This preparation has a brown color, and leaves on evaporation a strongly adherent pellicle. It promptly coagulates blood, leaving a consistent clot, and favors the cicatrization of the wound. (Dr. CARLO PANESI.)

FERRATED STYPTIC COLLODION.

127. ℞.	Collodion,	6	parts.
	Crystallized perchloride of iron,	1	part.

Mix very gradually, so as not to generate much heat. Apply locally.

This composition has a yellowish color, and is perfectly limpid. It leaves on the skin a yellow, elastic pellicle, and is a useful hæmostatic. (*Journal de Medecine d'Anvers*, 1867.)

STYPTIC COTTON.

The following method for the preparation of this substance is that preferred at the Pennsylvania Hospital, Philadelphia: Take a roll of fine jeweler's cotton, and thoroughly saturate it in a mixture of Monsel's solution of the subsulphate of iron, diluted with two parts of water; let it stand in the mixture for forty-eight hours; press the liquid out, and dry in a warm room, then pick or card out in fine shreds. It is better to make in small quantities, as there seems to be some change in the cotton when kept for any length of time, it losing its texture and breaking up in a fine powder when handled, thus rendering it unfit for application.

STYPTIC LINT.

This may be prepared by steeping lint in the tincture of the perchloride of iron. Another very useful form, especially when it is desired to produce a superficial slough, as well as to stop bleeding, is *blue lint*. This is prepared by steeping the lint in a saturated solution of the sulphate of copper, and drying carefully. It should be kept in stopped bottles, ready for use. (T. HOLMES.)

STYPTIC WOOL.

Boil the finest carded wool for half an hour in a solution containing four per cent. of soda; then wash in cool, soft water, wring and dry it. Dip several times in fluid chloride of iron diluted with one-third of water, squeeze and dry in a cool draught of air. Card, and keep dry in caoutchouc bags or glass-stoppered bottles. (Dr. EHRLE, of Isny, in *The Lancet*, 1871.)

128. ℞. Plumbi acetatis, gr. xv.
Digitalis pulveris, gr. vij.
Opii pulveris, gr. iij.
Confectionis rosæ, gr. xv.

Divide into twenty pills. Three or four a day, to check hemorrhages, of various origin.

DR. OROSI, OF ITALY.

129. ℞. Acidi tannici, ℈ ij.
Sacchari, ʒ ss.
Spiritûs lavandulæ, gtt. v.
Adipis, ʒ iss. M.

This styptic ointment is to be spread on charpie, which is to be left in contact with wounds, the seat of passive hemorrhages.

PROF. PANCOAST, PHILADELPHIA.

130. ℞. Potassii carbonatis, ʒ ij.
Saponis venet., ʒ j.
Spiritûs vini rectifi., f. ʒ iij. M.

Apply locally. A very good styptic, especially in the milder forms of hemorrhages.

PROF. S. D. GROSS, PHILADELPHIA.

131. ℞. Iodinii, ʒ j.
Potassii iodidi, ʒ ij.
Alcoholis, f. ʒ ij.
Aquæ destillatæ, f. ʒ iv. M.

Use as an injection in hemorrhage of the internal cavities, especially of the uterus from the presence of fibroid tumors, etc.

DR. MONSEL.

132. ℞. Acidi tannici, ℈ j.
Aluminis, ℈ ij.
Aquæ rosæ, f. ʒ iij. M.

For external use as a hæmostatic.

PAGLIARI'S STYPTIC.

133. ℞. Tinct. benzoini, f. ʒ viij.
Aluminis, ℔ j.
Aquæ, ℔ x.

Mix and boil for six hours in a glazed earthen vessel, stirring constantly and supplying the loss with hot water. Strain and keep in stoppered bottles. It is said to cause an instantaneous coagulation of the blood.

MARTIN'S TANNIN SOLUTION.

134. ℞. Tannic acid (old), ℥ j.
Distilled water, ℥ ij. M.

After subsidence decant the supernatant fluid.

This is highly recommended by Mr. P. MIALL, in the *British Medical Journal*, Nov. 7th, 1874. He states that it is a most powerful astringent, almost free from irritating properties. It is one of the best dressings for wounds—far superior to collodion, and even less irritating than the styptic colloid, which it somewhat resembles. If applied by a brush and allowed to dry, it soon forms a pellicle which excludes the air, and gives ease to pain. It may be applied to almost any form of ulcer, and to wounds after amputations or other operations, especially when not very deep. It answers well, for instance, after the operation for hare-lip, painted over the pins and threads, in the same way as collodion is sometimes used.

RÉSUMÉ OF REMEDIES.

**Acida.* Sulphuric, nitric and acetic acids, when diluted, effectually check bleeding from the smaller vessels and capillaries. *Vinegar*, which is always at hand, may often be called into requisition in slight cuts, leech bites, &c. The stronger acids may also be used for their cauterant effect on oozing surfaces.

Aconitum, as a cardiac depressant, is occasionally valuable in hemorrhage.

Agaric is valuable in leech bites, cuts, oozing from the gums, &c.

Alcohol. When the heart is suddenly enfeebled by hemorrhage, alcoholic stimulants may be cautiously given, care being had not to bring about violent reaction. Opium is preferable.

Alnus Nicana. The bark of the speckled alder contains a large amount of tannic acid, and has been employed with success as a hæmostatic by Dr. T. R. DUPINS. (*Canada Lancet*, October, 1871.) Cloths saturated in astrong decoction were applied to the bleeding surface.

Alumen is a valuable styptic. It is an ingredient of PAGLIARI'S styptic (F. 133) and others. It may be dusted on after wiping dry.

Ammonia. In the exhaustion from severe hemorrhage, some of the preparations of ammonia are exceedingly valuable heart stimulants.

Argenti Nitras. Bleeding leech bites, &c., may be touched with a stick of caustic.

Cibotium Cuminghii. The light brown, soft filaments of this East Indian tree fern (known as Pengawhar Djambi) have been imported for use as a local hæmostatic. They are used like styptic cotton, and are reported very efficient.

Collodion, useful in the form of RICHARDSON'S "styptic collodion." (See above, p. 120.)

Creosotum. In hemorrhages from the nasal, pharyngeal and oral cavities, this is an

excellent local application. In the case of dental hemorrhage, a small tampon, impregnated with a thick mixture of creosote in substance and alumen, is to be pressed into the bleeding alveolar cavity. If the hemorrhage does not stop at once, another similar compress should be superimposed, and the pressure increased with the finger. In obstinate nasal hemorrhages, plugging the nose with charpie tampons, impregnated with the same mixture, is uniformly successful.

Cupri Sulphas, used in the preparation of *blue lint* (p. 119,) and in stick to leech bites, &c.

**Digitalis* has an undoubted power to arrest hemorrhage. It is appropriate in internal hemorrhages, when large doses must be given, preferably of the infusion.

**Ergota*, internally or in hypodermic injection, contracts the arterioles, and is invaluable in the hemorrhagic diathesis.

Erigeron Canadense is highly esteemed by Dr. GARRETSON. (See above.)

Ferrum. The preparations of iron stand at the head of the list of styptics. The solution of the persulphate (Monsel's salt) is perhaps the most popular. The tincture of the chloride or perchloride is much used. Mr. ERICHSEN considers it "the readiest and most efficient hæmostatic." Others assert, however, that it is most apt to irritate the surface of wounds and prevent union by the first intention than the persulphate, which is quite free from causticity. (RINGER, GROSS.) The liquor ferri pernitratis is preferred by some English surgeons.

The following is an efficient mixture in the hemorrhagic diathesis:

135. ℞. Acidi gallici, ℥ss.
Acidi sulphurici diluti, f.℥j.
Tinct. opii deodorati, f.℥j.
Infusi rosæ comp., f.℥iv. M.

A tablespoonful every four hours or oftener. (BARTHOLOW.)

Galla. Gallic acid is a moderately energetic local styptic.

Hamamelis. In the hemorrhagic diathesis, and in persistent oozing of blood, one or two drops of the tincture of witch-hazel every two hours is often efficient.

Krameria is a powerful internal astringent.

Matico is not an astringent, but has a well-sustained reputation as a hæmostatic, both for local use and as an internal remedy.

Myristica. Nutmeg, browned like coffee, powdered and applied to the bleeding surface, is a prompt styptic. A case of marked hemorrhagic diathesis, where it was used "with astonishing success," is reported by Dr. S. B. CHASE, of Iowa. (*Medical and Surgical Reporter*, Dec., 1874.)

Nux Vomica. Where the hemorrhagic tendency depends upon inpoverished blood, a combination of nux vomica and iron is very serviceable.

**Opium.* In the exhaustion after profuse hemorrhage, no remedy is equal to a full dose of opium. (See above, p. 119.)

Plumbum. Acetate of lead in solution is an astringent solution of minor importance. Internally, in doses of gr. v every hour or two, it is very efficient in visceral hemorrhage.

Tannicum Acidum is employed in a variety of styptic preparations. (See F. 126, 129, 132, 134.)

**Terebinthinæ Oleum.* In the hemorrhagic diathesis and internal hemorrhage, f.℥ss of turpentine every two hours often proves efficient. It is supposed to act as a vaso-motor stimulant. Applied externally, it is strongly recommended by Professor BILLROTH. Some wads of charpie are soaked in it and introduced into the wound. It is, however, an heroic remedy, not only because its application induces severe pain, but also because it excites severe inflammation in the wound and its vicinity.

Veratrum Viride, as a cardiac depressant, is well spoken of in active hemorrhage. (Above, p. 119.)

GENERAL MEASURES.

Cauterization. When styptics fail, resort must be had to cauterants. Of these the nitrate of silver, nitric acid and carbolic acid are most in use. The actual cautery may also be employed. It should be at a black or dull-red heat, and lightly applied. Dr. THOMAS C. STELLWAGEN, of Philadelphia, has recommended pointed sticks of hard or compressed *wood* as cauteries. These sticks may be made more inflammable by soaking in something like a solution of saltpetre, before drying and passing through the process of condensation, which dentists accomplish by an ordinary draw-plate, such as is used for making wire. To use one, a suitable portion should be burned in the flame of an ordinary match for a few moments, and then, by blowing out the flame, the incandescent portion at the point may be brought to the shape desired, and the temperature raised by passing rapidly through the air, or *vice versa*, lowered by allowing a trifling coating of ash to accumulate upon the surface. This will burn thus for one or more minutes, according as more or less is charred by the flame, and one or more of the small sticks are used singly or tied together, or the stick made of larger diameter.

Cold. The exposure of the cut surface to the cold air is often sufficient. Lint soaked in ice-water, or a small stream of cold water allowed to drip on the wound, or, when it is to be had, coating the surface with clean *snow* or the spray of ether, are more positive means. If cold does not check the bleeding immediately, it is useless to continue it. The following "freezing mixtures" are sometimes useful. They reduce the temperature from 50° to about 8°–10° Fah.

136. ℞. Ammonii chloridi,
Potassii nitratis, āā ℥j.
Aquæ, f.℥ij. M.

137. ℞. Ammonii nitratis,
Sodii chloridi, āā ℥j.
Aquæ frigidæ (ice), f.℥ijss.

Position. A valuable aid in checking hemorrhage in one of the extremities is by placing it in such a position that the flow of blood to the part is checked or suspended. The simplest position is that of *elevation*, the arm or the leg being raised above the level of the trunk. Still more efficient is *forced flexion*. The following experimental results, reported by Mr. GEORGE T.

HEATH to the British Medical Association, indicate both the manner and relative effects of this method:

A. *Upper Extremity.* 1. Forearm bent on arm by muscular action of the individual experimented on. In persons with considerable muscular development, pulse at the wrist entirely stopped. 2. Forearm bent on arm simply, with the hand flat on the shoulder. Pulse weak and indistinct; sometimes, but rarely, quite stopped. 3. Forearm bent on arm, with hand pronated. Pulse more weakened, sometimes stopped. 4. Forearm bent on arm, hand pronated and extended. Pulse usually quite stopped. 5. Forearm bent on arm, hand pronated and bent at wrist. Pulse either almost imperceptible or quite stopped. 6. Forearm bent on arm, with a roll of lint or cambric handkerchief rolled up and laid in bend of elbow. Pulse always entirely stopped.

B. *Lower Extremity.* 1. Leg flexed on thigh. Pulse in posterior tibial artery much weakened. 2. Leg flexed on thigh, and thigh on abdomen. Pulse in posterior tibial stopped altogether almost invariably. 3. Leg flexed on thigh, with a roll of lint or cambric pocket handkerchief laid in the bend of the knee. Pulse stopped in some cases, not always; but with flexion of thigh on abdomen also, pulse invariably stopped. 4. Thigh flexed on abdomen, the trunk bent forward. Pulse materially weakened.

From these experiments, as well as from those cases of actual bleeding in which this method has been used, it may be fairly inferred that we possess in over-flexion a blood-controlling agent of considerable power, which can be applied on the shortest notice.

Pressure is an effectual hæmostatic when it can be applied evenly over the whole wounded surface. Compresses and bandages are the means usually employed. When the hemorrhage is from cavities they may be plugged. The digital pressure applied by the fingers on the course of the artery above the wound, and instrumental pressure by tourniquets, the Esmarch bandage, &c., need not be considered here.

Torsion. This method of arresting hemorrhage is valuable in arteries of small calibre, though it has also been successfully employed in the main vessels of the extremities. It is applied by several methods:

Free Torsion. In this method, THIERRY recommends that the artery should be neither fixed nor drawn out, but simply grasped with a pair of broad forceps, and twisted without breaking off the end of the vessel; ten rounds in the case of large, six in medium-sized, and four in small arteries, being usually sufficient. FRICKE says the artery should, without violence, be drawn out about two-thirds of an inch, but not fixed, lest the twist may extend to the attached part of the vessel. The artery, thus held, should be detached from the surrounding tissues by a second pair of forceps. Twisting is then to be continued until the end of the artery is torn off, eight or nine revolutions being generally necessary.

Limited Torsion. In this process, AMUSSAT advises to draw out the artery five or six inches by means of a pair of forceps with a closing bolt. The vessel is then to be separated from its connections with a second pair of forceps, and held at its fixed point by the latter while the end is twisted off by the former.

Combined Method. The artery is first seized with a pair of broad-pointed lock-forceps (one blade being placed within, and the other without the vessel,) and gently held without tension; with a second pair of forceps it is then separated from its connections, and fixed just below its point of attachment. The vessel is now twisted until it is felt to break, which generally occurs after the fourth, fifth, or sixth revolution.

All these methods recommend twisting the artery until it breaks. On the contrary, Mr. THOMAS BRYANT, of London, advises that the end be rotated only till the sense of resistance has ceased, and that it should not be twisted off. This surgeon has probably had the most favorable experience of any. He says: "After seven years' experience of the practice, applied to vessels of all sizes, the femoral being the largest, I have had no mishaps. * * * * * I have had stumps heal in a week, and patients up in two weeks, without one single drawback. At Guy's Hospital, up to 1874, we have had two hundred consecutive cases of amputation of the thigh, leg, arm and forearm, in which all the arteries had been twisted (one hundred and ten of them having been of the femoral artery,) and no case of secondary hemorrhage."

Transfusion. As a last resort in hemorrhage, transfusion should be resorted to. The operation is easy and often successful. Experience has taught that it is not advisable to inject more than f.℥ iv–viij of blood, and that this is sufficient to recall life. (BILLROTH.)

PHAGEDÆNA.

DR. JOHN H. BRINTON, OF PHILADELPHIA.

As an application in phagedæna this surgeon places great reliance on *bromine*. Having scraped away the slough with a wooden spatula, he applies the following to the disintegrated surface:

138.	℞.	Brominii,	f.℥j.	
		Potassii bromidi,	gr. xxx.	
		Aquæ,	f.℥ij.	M.

Apply thoroughly to the part.

After the application (done under ether) place cloths dipped in olive oil upon the cauterized surface; remove these a few hours later, and keep flaxseed poultices on the part until the slough separates, which is usually two or three days. Should the succeeding granulations be weak and feeble they should be dressed with—

139. ℞. Iodoformi, gr. xx.
Cerati simplicis, ʒj. M.

If the surface turns gray, brush it very lightly with solid nitrate of silver. Internally, some preparation of iron, the tincture of the chloride or the potassio-tartrate, is required. (*Medical and Surgical Reporter*, December, 1873.)

MR. T. HOLMES.

This surgeon points out that phagedæna differs from hospital gangrene in that little or no constitutional fever accompanies it, and that it involves little danger of life. The treatment, he thinks, should be mainly local. Energetic caustics, especially fuming nitric acid, should be applied to the surface of the ulcer to prevent it from spreading, followed by detergent and stimulating applications. *Opium*, said by some to exert a specific effect in phagedæna, has not merited this praise in Mr. HOLMES' hands, though it is useful to allay irritation and procure sleep. The bowels should be evacuated, and stimulants with ammonia, quinine, and nourishing food are indicated.

PROF. PROFETA, OF PALERMO.

140. ℞. Pepsini, ʒss.
Acidi lactici, ℥ij.
Aquæ, f.ʒiij. M.
Use as a lotion to the ulcerated surface

DR. F. F. MAURY, OF PHILADELPHIA.

This surgeon (*Medical and Surgical Reporter*, June 1st, 1870,) recommends as the caustic, mono-hydrated sulphuric or nitric acid. *Carbo-sulphuric paste* is also good.

141. ℞. Acidi sulphurici,
Carbonis ligni, āā ʒss.

The parts should be cauterized boldly and thoroughly and *early*. It should be repeated every two or three days, until the disease is checked. As a deodorizer and detergent, use water very freely, the permanganate of potassium and Labarraque's solution. Oakum is excellent to catch and absorb the discharges.

Internally, the potassio-tartrate of iron, gr. xx–l, and quinine, gr.

vj, should be given daily. Under no circumstances should any form of mercury be administered. The utmost cleanliness is indispensable.

DR. D. B. SIMMONS, OF JAPAN.

After failing with the standard treatments, this surgeon obtained excellent results by the continuous immersion of the diseased parts in *hot or warm water*. (See pp. 20, 76.) A hot sitz-bath may be used continuously for twenty-four to thirty-six hours; or, every alternate hour, an iodoform dressing being applied in the meantime. In the interval, iodoform powder may be freely sprinkled over the part. The water promptly relieves the burning and smarting pain. (*The Medical Record*, Sept., 1875.)

DR. ROBERTS BARTHOLOW, OF CINCINNATI.

In sloughing phagedæna, the *iodide of iron* is frequently prescribed where the accident occurs in debilitated constitutions. Some authorities prefer the *tartrate* or *potassio-tartrate* under these circumstances, but the iodide acts with more promptness and vigor.

As an escharotic, probably none is more desirable than *nitric acid*. A glass rod or bit of pine is dipped into the acid and applied, care being taken to penetrate to all the sinuosities of the sore. A water or spirit dressing, or dilute tincture of benzoin, may then be applied.

For further regarding phagedæna, see Phagedænic Ulcers and Chancres.

PYÆMIA.

DR. ALONZO CLARK, OF NEW YORK.

In that form of septic blood-poisoning which follows puerperal lesions, as well as in others, this author recommends *opium* in large doses, frequently repeated and kept up for a long time. The bowels of a patient can be kept unmoved for two or three weeks, his respiration may be reduced to twelve or fourteen in a minute, and, in fact, he may be kept under the fullest influence of the drug for a long time. In order to carry out this treatment, it is necessary that the physician remain with his patient, only being relieved by another phy-

sician, constantly. Besides being used in this way, opium is also used against the profuse diarrhœa in pyæmia, and as a narcotic against the restlessness of the patients.

F. FORCHEIMER, M. D., OF CINCINNATI.

This writer observes (*The Clinic*, Feb. 24th, 1877,) that the method of treatment by stimulation is especially valuable in acute, foudroyante cases of septicæmia. Here it is our duty to keep the patient alive until the shock given to the system by the introduction of so much virulent material into the blood may have passed over. In these cases this method is the only one that promises any hope for success. In order to insure methodical application of the various remedies, it is well to give the patient something, say every quarter of an hour or ten minutes. Thus, we begin by giving a dose of brandy; at the end of a quarter of an hour, the patient receives a liberal quantity of beef tea; at the end of half an hour, we give a few grains of quinine; a quarter of an hour from this time he receives milk, or punch, wine whey, or whatever we wish to give; and then we begin with brandy again, and the next hour have such changes made as may be desirable, always having the remedies given at a fixed interval. In this way we are always sure that our patient receives enough, and we can, without skilled nurses, rely upon our treatment being carried out. If we want to add to the stimulating effects of alcohol the antipyretic, we simply increase the dose, and we, as a rule, need fear no bad results from the administration of this remedy, as septicæmic patients seem to be able to bear great quantities without bad effects.

MR. JOHN ERICHSEN.

The curative treatment of pyæmia is stated by this writer to be most unpromising. The only plan he relies upon is the stimulating and tonic one, by alcohol, ammonia, bark and beef tea. He has, however, seen recoveries effected by the administration of large doses of *quinine*, gr. v every three hours. This very decidedly checks the rigors, but does not seem to diminish the temperature or the sweats. In some cases he has administered chlorate of potash, in full doses, ʒ ij–iv, in the day, in addition to the quinine and wine, with benefit. If the depression is great, he administers carbonate of ammonia, gr. v–xv, well diluted, from time to time, with fluid nourishment, brandy, &c. The most complete hygienic measures must be observed.

MR. JOHN WOOD, LONDON.

This surgeon has successfully treated some cases of pyæmia by *carbolizing* the patient—first, by keeping the body in a carbolized atmosphere, employing small muslin bags filled with carbolized powders placed in the bed, and keeping the bed-clothes raised by means of a cradle; and secondly, by the internal administration of sulpho-carbolate of iron. (*Medical and Surgical Reporter*, July 22d, 1871.)

DR. THOMAS H. TANNER.

Calomel and blood-letting, once frequently employed in this disease, are now regarded as of more than doubtful efficacy. The treatment should be supporting and stimulating from the outset. Great attention should be paid to the nursing and hygienic surroundings. The room should be large and well ventilated, and the most scrupulous cleanliness enforced. The body of the patient should be sponged, a part at a time, and several times a day, with a mixture of vinegar and water; his strength should be supported on alcoholic stimulants and concentrated animal food. Opium is necessary to quiet restlessness, and quinine in large doses may be administered. The following combination is valuable:

142. ℞, Quiniæ sulphatis, gr. xij–xxiv.
Acidi sulphurici aromatici, f. ʒ iss.
Tincturæ lupuli, f. ʒ vj.
Aquam, ad f. ʒ viij. M.
One-sixth part three or four times a day.

The sulphites have been recommended. (Their efficacy is doubtful.) The mineral acids generally act well. One of them may be combined as in the above prescription. When there is exhaustion and nervous irritability, phosphoric acid combined with bark is useful.

143. ℞. Acidi phosphorici diluti, f. ʒ iss.
Tincturæ cinchonæ comp., f. ʒ j.
Syrupi aurantii, f. ʒ vj.
Infusi aurantii, f. ℥ viij. M.
One-sixth part three times a day dissolved in one or two pints of lemonade or barley-water, the whole of which the patient should drink from time to time through the day.

Iron is also a remedy of great service. It may be combined with glycerine and an aromatic:

144. ℞. Tincturæ ferri chloridi,
Glycerinæ, āā f.℥ss.
Tincturæ cardamomi comp., f.℥j.
Aquam, ad f.℥viij. M.
One-eighth part every three or four hours.

The strength must be kept up by concentrated nourishment and alcoholic stimulants, as beer, wine and brandy. Sponging the surface of the body with vinegar and water is refreshing when there is much exhaustion.

SIR JAMES PAGET, M. D., LONDON.*

Chronic Pyæmia.—This distinguished surgeon points out the not infrequent occurrence of pyæmia in a chronic form. Its local evidences are, more often than those of acute pyæmia, seated exclusively or chiefly in different parts of the same tissues; they are more frequent in the trunks and limbs than in internal organs; and when seated in the veins, are mostly found toward the close of the disease.

The prognosis is usually favorable. The slower the pulse and breathing, and the less the sweating, the greater the probabilities of recovery.

The usual treatment should be with good, patient nursing, a moderate use of stimulants and an abundance of fresh air.

Internally one may prescribe:

145. ℞. Liquoris potassæ, ℥j.
This amount in water thrice daily.

The curative influence of *liquor potassæ* in some cases seems clearly proved. It appears to exert a positive and almost specific influence on certain morbid deposits, as deep-seated inflammatory infiltrations.

RÉSUMÉ OF REMEDIES.

**Alcohol.* The demand for alcohol as food and as an aid to assimilation is very great in this disease. Recently Dr. Theodor Clemens, of Frankfort-on-the-Main, has reported eight cases of severe type, which recovered under the administration of good red wine in as large amounts as they would drink.

Aqua Calcis, with milk, is a valuable dietetic auxiliary. Dr. Joseph Bell, of Edinburgh, has reported three recoveries in which, with hardly any medicine, he gave milk with lime-water, eggs and beef tea, at short intervals.

**Clinical Lectures and Essays*, 1875.

Carbolicum Acidum has been experimented with in pyæmia, but the results are unsatisfactory.

Ferri Chloridi Tinctura has been administered in large doses, with little benefit.

Hypophosphites of sodium, potassium and ammonium. These have yielded good results in some cases, and deserve trial.

Hyposulphites. The sulphites and bisulphites of the alkaline metals were largely used during our war, but the general experience was that they are of little use.

**Quiniæ Sulphas.* M. Verneuil, of Paris, as well as many other surgeons, speaks emphatically of the value of quinine, given in large doses. To prevent the rigors, Dr. Gross prescribes:

146. ℞. Quiniæ sulphatis, gr. x.
Morphiæ sulphatis, gr. ss. M.
This amount every four or six hours. No benefit, he says, can accrue from smaller doses.

Dr. Fordyce Barker gives gr. x–xx twice daily, until constitutional effects are produced. He emphatically claims for it the power of preventing the formation of pyogenic deposits.

Terebinthinæ Oleum. Dr. J. S. Holden reports the recovery of a severe case of pyæmia under the use of ℥ss doses of this agent. (*Lancet*, Jan., 1874.) It probably acts as a vaso-motor stimulant.

Veratrum Viride. In the early stages of septicæmia, Dr. Fordyce Barker strongly commends this sedative. He usually commences by giving five drops of the tincture of veratrum viride every hour. If a decided impression be not made on the pulse after two or three doses, he increases each dose by one drop until a positive effect is gained, and thus brings down the pulse from 120, 130 or 140 to below 80. The influence of the veratrum viride should be steadily kept up until two or three days after all constitutional disturbance has subsided. When the pulse is once reduced by the veratrum viride, usually two, three or four drops every hour will be sufficient.

SHOCK.

T. LAUDER BRUNTON, M. D., OF LONDON.

This author observes that in shock we have two conditions to remove: the first, feebleness of the heart, due to the action of the vagus; second, the dilatation of the great vessels, especially the veins in the abdominal and thoracic cavities.

To counteract the cardiac debility, we apply stimulants, especially that powerful heart stimulant, *heat*. A hot poultice or a bottle of hot water should be placed over the heart. Towels wrung out with hot water should be bound round the head. The patient should be in a