unhealthy ulcers. In specific infection, it is used in its concentrated form, and is the best of escharotics.

Opium, or some of its alkaloids, is much valued as a soothing ingredient in lotions and ointments to irritable ulcers.

Pepsina has been advocated. (F. 271.)

Pix Liquida. Tar has been used with advantage in the form of ointment, in foul and indolent ulcers. It is a popular remedy for this purpose in veterinary surgery.

Plumbum. The soluble salts of lead form common ingredients in lotions for ulcers. Lead palster is in familiar use.

Potassii Permanganas is well spoken of as a deodorant. In dilute solution it is a mild stimulant. Employed in the form of powder it acts as a gentle caustic, and may often be applied with advantage in sloughing ulcers.

Quiniæ Sulphas. Dr. C. I. WILLIAMS (*Southern Practitioner*, Nov., 1879,) recommends in old sores—

277. ℞. Quiniæ sulphatis, ʒj.
Iodoformi, ℈j. M.
Dust on the ulcer several times daily.

Sodii Boras. A favorite application of Mr. SAMSON GAMGEE'S to old ulcers is—

278. ℞. Sodii boratis, ʒss.
Tinct. lavand. comp., ʒjss.
Glycerinæ, f.℥jss.
Aquæ, f.℥vi. M.
For local use as a lotion.

Sulphides. Dr. RINGER says that a sore discharging a thin, watery, unhealthy ichor will, under the administration of the sulphides of calcium, speedily undergo a healthy change, the discharge becoming at first more abundant, afterwards diminishing, and throughout continuing thicker and healthier.

Sulphurosum Acidum may be used diluted as a wash.

Tannicum Acidum. Tannin, having the property of coagulating albumen, is employed largely to sores with profuse discharge and luxuriant granulations. Added to glycerine, it is a very effective dressing.

Zincum. The sulphate of zinc, as a stimulant and astringent, lessens the secretion and promotes healthier growth in ill-conditioned, free-secreting sores. The chloride, in dilute solution, is a still more energetic article.

The Elastic Bandage. As an important advance in the treatment of ulcers of the extremities, must be mentioned the elastic bandage as employed by Dr. HENRY A. MARTIN, of Boston. He applies it firmly above the ulcerated part, and is so fully convinced of its value that he says that such a bandage *without any other means or appliance whatever*, is all that is necessary for the perfect and *permanent* cure of all curable non-specific ulcers of the leg.

VIII. LESIONS OF THE BONES AND JOINTS.

Bunion and Ganglion—Caries and Necrosis—Osteitis and Periosteitis—Sprains—Synovitis (Arthritis.)

BUNION AND GANGLION.

BUNIONS.

PROFESSOR S. D. GROSS, M. D., PHILADELPHIA.

For the radical cure of this troublesome affection, excision of the sac has been resorted to, but this operation is liable to be followed by erysipelas, and is dangerous. A much safer plan is to divide the sac subcutaneously with a delicate tenotome, cutting it up into numerous fragments, and then penciling the surface of the swelling several times a day with tincture of iodine. This method our author has practiced in numerous cases with gratifying results.

DR. CHARLES H. LOTHROP, OF IOWA.

This writer tried a variety of apparatus, Bigg's, Erichsen's, etc., without benefit, but is satisfied that the following will be found successful. Displacement of the toe is the obstacle to be overcome. A large and wide boot, shoe or slipper must be worn, made of cloth or other light material. A cot, made of muslin or some other firm and soft fabric, is placed upon the great toe of the affected foot. One or more strips of adhesive plaster are placed on and around the heel, their free extremities extending toward the free end of the cot upon the toe. The ends of the plaster and cot are then connected by means of a strong rubber ribbon, so that there is a constant traction of the toe to return to its natural position. If necessary, other strips of plaster should be applied to retain the apparatus in position, one about the instep, and one about the ball of the foot; while another may be bound about the great toe and attached to the second.

The contractile power of the external ligament and abductor pollicis is thus overcome without injury. If they do not readily yield, they

should be partially divided by tenotomy. There is no danger of inflammation of the joints; and, by care and perseverance, the antagonistic power of the internal lateral ligament and abductor pollicis pedis is regained, and the distortion disappears. (*Boston Medical and Surgical Journal*, June, 1873.)

GANGLION.

In this variety of cysts of the tendons, the custom and experience of the surgeon, as well as the age, sex, occupation and position of the patient, usually determine one of the following methods of treatment: Applications, *e. g.*, iodine liniment, or tincture, or blistering solution; pad and strapping; bursting, either by digital pressure, or by striking with the back of a book; incisions, either direct or subcutaneous; drainage, with internal irritation, by passing a stem of thread or silk directly through it. These separately or conjointly, usually produce a temporary, if not always a permanent cure.

The pneumatic aspirator may often be conveniently used to draw off the contents of the sac; after which, if compression be used for a few days, the trouble is not liable to return.

Dr. J. PAULY, of Berlin, constricts the limb by the Esmarch bandage, anæsthetizes locally with the ether spray, (which acts far more efficiently when the circulation is thus impeded,) and opens the ganglion under a carbolic spray, empties it, and dresses it with a Lister dressing.

Dr. BIDDER, of Berlin, recommends the injection of carbolic acid. An ordinary hypodermic syringe, having a sharp needle with a cutting edge near the point, is filled with a two or three per cent. solution of carbolic acid. A fold of the skin being pinched up, the needle of the syringe is thrust under it until the point reaches the capsule of the ganglion. A little slit is made through this with the sharp-edged point of the needle, and then, the latter being slightly withdrawn, the contents of the ganglion are expressed into the surrounding tissues. The point of the needle is then once more inserted into the now emptied ganglion, and a few drops of the carbolic acid solution are injected, and a simple water dressing is afterwards applied.

CARIES AND NECROSIS.

In all cases of caries and necrosis affecting the superficial bones, Dr. F. KIRKPATRICK, Dublin, speaks with the utmost confidence of the application of *potassa cum calce*. (*British Medical Journal*, Aug., 1867.) He introduces it into the fistulæ leading down to the diseased bone, converting them into large openings, so that the carious bone is brought into view and within reach of the further application of the caustic.

MR. POLLOCK, OF LONDON.

The plan proposed by this surgeon (*Lancet*, May, 1870,) in caries and necrosis, and successfully carried out by others, is to expose the diseased bone and apply to it, with a glass brush, a solution of equal parts of *sulphuric acid* and water; or, a lotion of one part of the strong acid to six of water is kept in constant contact with the part by means of pieces of lint saturated with it. The strength of the acid is gradually raised, until it is applied pure.

Dr. EPHRAIM CUTTER, of Cambridge, Mass., has succeeded with a modified form of this treatment, injecting the diseased cavity with the following solution, at first twice a day, afterward once a day:

279. ℞.	Acidi sulphurici aromatici,		f. ʒ j.	
	Aquæ destillatæ,		f. ℥ j.	M.

Numerous observers have testified to the great value in such diseases of what is known as "Villate's solution:"

280. ℞.	Liquoris plumbi subacetatis,		f. ℥ iv.	
	Zinci sulphatis,			
	Cupri sulphatis,	āā	℥ ij.	
	Aceti vini albi,		f. ℥ xxvj.	M.

This should be used diluted, one part to ten of water, and applied to the part once or twice daily, by means of a sponge and bandage, or injected with a syringe. The solution, when properly made, has a light-green, opaque color. Wine vinegar, not cider vinegar, must be used in preparing it.

Prof. ANDREWS, of Chicago, has obtained excellent results in some cases of carious bones, by injecting them thoroughly, through the orifices of the wound, twice daily, with a solution of *carbolic acid*, ten grains to the ounce.

Of course, whatever local treatment is adopted, it must be backed by tonics, rest, nutritious food, bathing, and hygienic surroundings.

The internal administrations of the phosphates have been supposed, by some, to hasten the formation of healthy bone.

As these affections are so frequently connected with serious general impairment, struma or syphilis, and sometimes with toxical agents, as phosphorus, it is indispensable that whatever local treatment be adopted, the previous and family history of the patient be thoroughly investigated, and constitutional remedies be prescribed to correct any form of dyscrasia or chronic poisoning.

PROFESSOR JAMES SYME, F. R. S. E.*

Caries of the Shafts of Bones.—It is noted, by this distinguished surgeon, that caries is generally seated in bones possessing a cellular or open texture, and when it occurs in those of the tabular or cylindrical kind, it is uniformly preceded by a morbid expansion of the compact structure, into a state resembling that which naturally belongs to those where the disease usually resides. The shafts of bones, especially the tibia, in consequence of chronic inflammation, are frequently enlarged, thickened, and, consequently, loosened in their texture, which comes to have nearly the same appearance as that of the spongy articulating extremities. In bones so altered caries occasionally occurs, but with one important difference from the disease as found in the spongy bones, and this is, that it is *easily curable.*

All incisions, rasping, trephining and cauterization are worse than needless. The disease will yield readily and certainly to the local application of *blisters* and the internal administration of *corrosive sublimate*, in usual doses.

Caries of Spongy Bones.—The treatment of true caries is preventive and remedial. The constitutional defects which tend to the production of the disease, must be carefully sought and combated. Locally, the actual cautery has been recommended; but, in most cases, it can hardly be applied to the affected surface, and its action is too limited. The best method is to destroy the carious bone by excision.

**Surgical Works*, Philadelphia, 1866.

OSTEITIS AND PERIOSTEITIS.

In both the specific and non-specific forms of these associated affections, Mr. T. HOLMES has derived much advantage from the continued use of *iodide of potassium.*

281. ℞.	Potassii iodidi.	gr. v-xv.	
	Tincturæ opii,	gtt. x-xx.	
	Aquæ,	f.℥ ss.	M.

This dose three times daily.

When inflammation is severe and suppuration threatening, an incision, reaching from one side of the tumor to the other, often gives instant and permanent relief.

In acute cases, the local treatment should begin by leeching, followed by hot fomentations, poultices and opium. *Blisters* are highly recommended by Professor CROSS. He applies one in such a manner as to cover the whole of the affected surface, and allows it to remain on until thorough vesication is produced. He also attaches much value to the internal use of *calomel,* commenced as soon as the patient is properly depleted, and steadily continued until gentle ptyalism is produced. He says there is no remedy which exerts so powerful and controlling an influence over inflammation of bone as this, and that there are few cases in which it is not applicable.

The value of the *seton,* in chronic osteitis, has lately been urged by Dr. J. A. AUSTIN, of England. (*Lancet,* Feb., 1877.) He introduces one steeped in carbolic oil, and leaves it there for several weeks. It is usually followed by a prompt diminution of the pain and other inflammatory symptoms.

PROFESSOR THEODOR BILLROTH.

Acute periosteitis is always dangerous to life, because pyemia is so apt to occur, especially when the femur is involved, and it is the more dangerous the longer the condition remains acute and the further it spreads.

In the treatment, we can accomplish more if we are called early; one of the most efficient remedies is painting the whole limb with *tincture of iodine.* This should be repeated until large vesicles form. When these dry up, more is applied. The patient is to be kept recumbent, which the pain itself usually enforces. Derivation to the intestinal canal, by saline purgatives, aids the treatment. Should suppura-

tion occur and fluctuation be distinctly felt, openings should be made in such a way that the pus shall escape without being pressed out. If the fever continues, the suppuration remaining profuse, and the pain persistent, we may try the continued application of bladders of ice Great advantage may also be obtained by the application of a fenestrated plaster splint. Much may be accomplished by great care and close attention to the patient.

The use of cups, leeches, mercurial ointment, and other antiphlogistic means, recommended by many at the outset of the disease, are, in Dr. BILLROTH's opinion, inferior to the application of iodine.

Chronic periosteitis must be treated constitutionally with regard to the dyscrasia which induces it (as syphilis, scrofula, etc.) Locally, *rest* of the diseased part is the first and most general rule of treatment. *Elevation* of the part is also a valuable adjuvant, as it avoids congestion by furnishing a mechanical aid to the escape of the blood.

When the symptoms are seen at their commencement, resolution should be aimed for. To effect this, powerful antiphlogistic remedies are of little use. Leeches, cups, purgatives and ice are only beneficial in acute exacerbations; their action is temporary, and may prove hurtful, by exhausting the strength. The bladders of ice, extolled so highly by ESMARCH, are indicated in cases accompanied by great pain, but otherwise are not called for.

The resorbent and milder derivative remedies are those which act the best. Tincture of iodine, ointment of iodide of potash, mercurial ointment diluted with lard, mercurial plaster, ointment made with strong solution of nitrate of silver, hydropathic dressings and mild compression bandages are the most appropriate measures. With these we can attack the disease when commencing, and may succeed in arresting it in its first stage.

If the process progresses, and the caries runs its course without suppuration, we may continue with the above remedies, and, in suitable cases, in vigorous persons, may combine with the above derivatives to the skin, such as fontanelles, the hot iron, etc. If the signs of suppuration begin and abscesses form, there is still a chance that, by continuing these absorbent remedies, re-absorption may be induced.

Should this hope fail, the question arises: Shall we open the abscess, or wait for it to open? On this point, Professor BILLROTH lays down the rule: If the abscess comes from a bone on which an operation is impossible or undesirable (as the vertebræ, sacrum, pelvis, ribs, knee-

joint, etc.,) *do not meddle with it*, but wait patiently till it opens. All the various methods proposed of opening large cold abscesses—subcutaneous puncture, drainage-tubes, caustics, Lister's plans, setons, etc.—are worse than needless, and the surgeon will always regret adopting them. Nothing, in any of these methods, in the least sanctions the claims made for them by their proposers.

In small abscesses originating in disease of the bones of the extremity, it is proper to open freely, as the reaction is insignificant. The wound may then be dressed with stimulating lotions. If the resultant ulcer does not improve under milder remedies, the hot iron may be applied; or the part may be cut; or the whole be extirpated.

SPINA BIFIDA.

DR. BRAINARD, OF CHICAGO.

The use of injections for the cure of spina bifida, were first suggested by this writer, in 1848. His prescription is:

282. ℞. Iodinii, gr. $\frac{1}{4}$–v.
Potassii iodidi, gr. $\frac{3}{4}$–xv.
Aquæ destil., f.℥j. M.
Half a drachm at one injection.

The rules for its use are:

1. Make the puncture subcutaneously in the sound skin, by the side of the tumor.

2. Draw off no more serum than the quantity of fluid to be injected.

3. Apply pressure during the operation, so that none of the solution enters the spinal canal.

4. If symptoms of irritation appear, draw off all the contents of the sac, and replace them with distilled water.

After the operation the patient should lie on his side; and, if there is much heat, warm, evaporating lotions to the part are required. As soon as the tumor becomes flaccid, it should be covered with collodion or supported by pressure. The injection should be repeated as often as necessary, care being taken that previous irritation has completely subsided.

MR. EDWARD ATKINSON, M. R. C. P., OF LEEDS.

This surgeon has recently reported a case of an unpromising character, cured by the *elastic ligature.* (*British Medical Journal,* May, 1875.) The tumor was in the cervical region, and about the size of a tennis ball. The child was nine weeks old. Having passed a fine elastic ligature four times tightly round the pedicle, he enveloped the tumor in cotton-wool. All the first night the child was restless, crying, and vomiting the breast-milk. Still it sucked, though the milk was rejected directly. A few drops of brandy in a spoonful of warm water, given several times, checked the sickness, and thenceforth it began to thrive. The surface of the tumor soon became vesicated, and the fluid contents oozed away, reducing the bulk. On the fourth day the sac was sloughing. The ligature was partially unwound and tightened up. On the sixth day the pedicle separated, when no hole was visible, nor any oozing of cerebro-spinal fluid from the stump. The sac was examined and found to be a true meningocele. The wound rapidly healed, and the child gained in weight daily, and was discharged at the end of the fortnight. When last seen, there was scarcely any scar to be seen, and very slight deficiency in the bones could be felt. The child was plump and healthy.

PROFESSOR JAMES MORTON, M. D., OF GLASGOW.*

This writer, who is Professor of Clinical Surgery, at Glasgow, holds, with the majority of surgeons, that injection is the most promising mode of arriving at the radical cure of spina bifida, and, in accord with VELPEAU and with BRAINARD, of Chicago, regards *iodine* as the most suitable active agent for the injected fluid. Novelty, however, is claimed for his method, as he uses as an injection, not a simple solution of iodine or a combination of iodine and iodide of potassium, but a fluid called *iodo-glycerine solution,* as follows:

283. ℞.	Iodinii,	gr. x.	
	Potassii iodidi,	gr. xxx.	
	Glycerinæ,	f.℥j.	M.

So named from its components, which are, as stated above, a combination of iodine with glycerine. It was thought that, as this fluid is less diffusible than either a spirituous or watery solution, it will be found

* *The Treatment of Spina Bifida by a New Method,* Glasgow, 1877.

less likely to permeate the cerebro-spinal fluid with rapidity, and so to cause shock or bring on convulsions. The injection of the iodo-glycerine solution, in order to be successful, must be practiced under certain precautions, the most important of which is the prevention of the continuous loss of the subarachnoid or cerebro-spinal fluid.

The results of this method, as shown by the reports of fifteen cases treated by the author and by other surgeons, appear to be most satisfactory, and certainly far surpass those obtained by any previous plan of treatment. Of the seven cases treated by BRAINARD, before the publication of his paper in 1861, in three only was there a permanent and complete recovery. Dr. MORTON states that of the fifteen cases treated by his method, twelve were successful and three fatal, and that all his own lumbar cases have, hitherto, been fortunate. In the operative treatment of spina bifida, some care must, of course, be taken in the selection of cases. Some cases, as the author points out, are so complicated by other defects, as paralysis, hydrocephalus, etc., as to be hopeless. In subjects who have no paralysis, and no deformity of importance, and who, apart from the presence of the tumor constituting a spina bifida, ought to be sound, this new method of treatment may be undertaken, in lumbar cases, at least, with very little fear of an unfavorable result.

SPRAINS.

In the treatment of sprains, surgeons differ somewhat. According to Mr. T. HOLMES, at first, while the active state of effusion is present, antiphlogistic measures are necessary. Where it is grateful to the patient, the sedulous application of *ice-bags* is, he thinks, the best; but if this is not tolerated, leeches, followed by warm fomentations or evaporating lotions, or irrigation with spirit and water, will best check the tendency to effusion. As soon as the patient can bear it, equable pressure, by strapping and bandage, or by splints, with perfect rest, should be adopted.

On the other hand, the eminent VELPEAU, and, more recently, Mr. SAMPSON GAMGEE, of Birmingham, England, have taught that not only can the patient bear well-applied pressure from the first, however great the swelling and acute the pain, but it may be laid down as a