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BY

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of
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in the
Medical Department
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as a mark of respect
for his qualities as a
Teacher Scholar

&
Gentleman

This dissertation is inscribed

By R. D. Bone

Osteitis

Unaccustomed as we are to exercise of this kind, the imperfections in composition, and what is of more importance, the want of originality in the subject we have chosen for consideration, will, it is hoped, actuate those, whose experience and scientific attainments enable them to detect the slightest error, to be as lenient in a critical perusal as the nature of circumstances will admit.

But to our subject.

Bone is that portion of the body noted for its hardness and durability. Considered collectively Bones constitute the solid framework of the body; "they are the organs of support; they give firmness and strenght to the entire fabric &c." Their shape and position are in accordance with the most approved mechanical laws, and on the whole are precisely adapted to the preservation of the form. In their minute structure Nature has shown her wisdom in incorporating just enough of the earthy and alkaline principles to render

them hard and durable, and enough of the animal principle to make them of a consistence sufficiently soft; so that in the one great strenght is obtained, while in the other liability to fracture is prevented. These principles or constituents are so intimately united that each point receives its due proportions of each constituent.

This mixture of earthy and animal matter is most beautifully arranged in fibres and laminae which are concentric in form; these embrace innumerable little

(Haversian) canals, which are more visible in the cancellous structure of the bone. These canals branch and anastomose with each other in all directions; chiefly however in the longitudinal axis of the bone. Contained within this substance are also to be found thousands of little lacunae or cells (of Purkinje), from which radiate in every direction small vessels called canaliculi; too small indeed to transmit ~~the~~ blood corpuscles but large enough to transmit the salts in solution for which purpose

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they seem to have been
set apart.

All these minute (as well
as the larger) passages are
lined with a very delicate
membrane, continuous with
the Periosteum by which
all bones are surrounded.

By this arrangement, ample
provision is made for the
circulatory apparatus and
Physiological functions of the
organ. The blood, newly
arterialized and laden with
nutrition, courses along the
little canals, replenishing the
wants of the bone; and in its
exit bears away the debris

or decayed tissue which is as constantly forming as the tissue itself.

After giving to bone its share of nervous influence, which it undoubtedly has, we are prepared to view it as an organ, complete in all respects; and as one of the most importance in the body. Indeed, were it not for this very interesting tissue, there would be no symmetry of form, nor usefulness of body; if it be lost, the body falls into a shapeless mass, and, as a consequence, helplessness ensues.

Hence we see its importance.

Bone, being as we have seen, a vascular organ, transmitting the fluids through out its substance, is liable to all the ailments of the other tissues that are vascular. In fact there is a striking analogy between the diseases which it takes on, and the same in the soft parts; the seeming discrepancy being accounted for by the modified action in the bone, consequent upon its less vascularity.

Owing to this modified vascularity, the progress of a disease of bone is, sometimes,

wonderfully retarded; and almost always as an inevitable result, is remarkably slow in its advance as well as decline. Chronicity, therefore, stands prominent in its nosology.

There are several interesting diseases of bone; but none more so than Osteitis, which demands our attention at present. This form of disease belongs to that class denominated Local Phlegmasia; and is marked by the pathognomonic signs of that class; viz: redness, heat, pain and swelling.

The bone, at first of a pale reddish tint, becomes of a scarlet or bright red color, and remarkably sensitive.

Of the pathognomonic signs, redness is of the most importance; it shows that vascularity is increased, and large quantities of the red particles of the blood allowed to flow to the bone.

The vital action of this hyperaemic condition of the blood, gives rise to another of the symptoms - heat. Prior to inflammation the bone is gifted with but little sensitiveness; but the acute pain, experienced when it is inflamed, is

marked; this pain, the third symptom in order, is no doubt caused by the tension of the nerve fibre to which it is subjected by the expansion of the tissue, which constitutes the last of the symptoms or swelling.

In primary Osteitis the lining membrane of the canals and of the bone itself is more or less involved in the inflammation; in fact we do not believe that genuine inflammation of bone can take place, without involving these structures.

The acute form of Osteitis is ushered in by sudden rigors

or shivering, followed by fever; these symptoms are accompanied with intense pain in the part affected. Soon after this, the soft parts assume a red color not unlike that of Erysipelas and are swollen, Death sometimes follows from the sudden violence of these symptoms.

Chronic Osteitis, by far the most common, frequently results from the acute. Its symptoms are, slow enlargement of the parts, seeming increase of weight, deep seated pain which is increased during the night, tenderness &c.

It may be proper to remark

that these forms of disease occur in systems, the condition of which, is quite different; a sthenic condition favoring the former, while an asthenic favors the latter.

The effects of osteitis are variable; the most common and evident being enlargement. And what is peculiar when this enlargement takes place, (which is nothing more nor less than a regular expansion of its minute structure), the bone ever afterwards maintains the enlarged condition. The relative constituents of the bone may or may not be

changed, according to the length of time it is involved in inflammation, or the condition of the system &c &c. The want of compactness in the enlarged and expanded bone renders it susceptible of ready compression.

Although this effect of inflammation is most common and frequent, yet it is not all; for in addition to the general enlargement, we may have induration, or an abnormal deposition of bony substance. Long continued inflammation is favorable to

This process, and it continues to such an extent as to obliterate the little vascular canals, sometimes going so far as to obliterate even the great medullary canal, and presenting a solid substance not unlike ivory. The bone is increased in weight, and permanent obstruction to the circulation ensues.

There is another form of enlargement mentioned in the books, which we do not think is entitled to notice in this treatise, as we shall confine ourselves to Osteitis proper. We mean enlargement

by deposition on the surface; this is an effect of Periostitis and not of Osteitis as we regard it.

Osteitis, continued for any length of time, involving as it does the delicate lining membrane of the minute canals and other membranous structures, causes more or less pus to be formed by their destruction. This pus has a tendency to the surface, and, if not prevented, escapes from the system.

Again, by inflammation of the bone, may result a thickening of the Periosteum

Medullary membrane &c; owing to their contiguity and inseparable attachments; indeed inflammation may be set up in them, - as we have said, - and the effects or results peculiar to such inflammation ensue.

The causes of this malady are frequently very obvious; at other times very obscure. A man receives a blow on the tibia, soon after which the bone becomes inflamed and characterized by all the symptoms we have mentioned under the head of acute Osteitis. Cold is

also a fruitful source among the causes; especially in connection with moisture

Rheumatic inflammation and Periostitis are also frequent causes.

A great deal has been said about Scrofulous and Syphilitic causes to this disease, and perhaps truthfully so; but after bestowing what little thought we can command on the subject, we are inclined to the opinion that in the majority of cases attributed to such causes, they only operated as predisposing causes; and

that the cause might be traceable to some one of the above mentioned, or similar causes. This seems the more probable when we recollect that such diatheses favor the taking on of inflammation, and being present only a slight cause, such as might not be noticed, is sufficient to create inflammation.

We have already spoken of the diagnosis of inflammation in bone, while noticing the acute and chronic forms.

The diagnosis of the effects of osteitis, of which we have

been speaking, is more obscure and difficult to be made out, during the life of the patient. The knowledge of this state of things is of little importance.

Our prognosis, in uncomplicated inflammation of bones, is not necessarily unfavorable if the constitution be good.

The slow progress ~~as before~~ (as before remarked) of action in the bone, admonishes us not to predict a too rapid recovery. A diathesis contaminated with a Syphilitic Tuberculous or some other taint, favorable to a

malignant attack, or where uncured for inflammation passes rapidly into a state of ulceration, curies or necrosis (which it is not our purpose in this short essay to notice) a loss of either limb or life is possible.

Resolution is the happiest termination of this inflammation; and by judicious treatment in the uncomplicated form we may confidently prognosticate such a result.

In the treatment of Osteitis the object sought for is the same as in local phlegmasia of the other tissues

viz; to promote resolution.
This, in the acute form, is
best accomplished by general
or local abstraction of blood,
as the condition of the
patient shall indicate. For
local depletion leeches obtain
preference; warm fomentations
poultices or cold applications,
suiting the feelings of the
patient, are very soothing and
salutary.

The administration of some of
the preparations of Mercury is
often beneficial. Of the
mercurial preparations the
Proto-Chloride is the most
popular, and should be

used till its constitutional effects are approximated. Opium is a valuable adjuvant at such times to allay pain.

The bowels are to be kept soluble by gentle aperients.

In Chronic Arteritis fomentations leeches &c as demanded by the inflammation and pain, change of air, nutritious diet, tonics and general recuperative measures are advisable.

Of the constitutional remedies none are entitled to higher repute than the Loxide of Potassium. Although its good effects are said to

consist in its salutary effects in membranous structures, yet that it manifests its peculiar excellence in Astetitis of the chronic form, now hardly admits of a doubt. Perseverance with this, as well as all other remedies, - for reasons above stated, - is necessary to obtain its good results.

It is given in doses of 3 grs to 4 grs three or four times a day in connection with sarsaparilla.

When pus has accumulated early and free incisions must be resorted to for its

exit, and a roller-bandage systematically applied to prevent further accumulation.

Should the discharge of pus be great, and the patient seem likely to sink under its results, we should, if the part be accessible, resort to amputation.

There is another auxiliary in the treatment, highly important on account of the benefit to be derived from it at times, and also of the danger incident to its use under certain circumstances. This is counter-irritation

In long standing cases after all our remedies have failed, and distressing pain is continued, counter-irritation in the adjacent soft textures often proves to be of vast importance. An issue formed in this way wonderfully relieves the irritation of the diseased bone sometimes; and as a matter of course relieves the pain. There are certain precautions to be borne in mind during the exhibition of this treatment, the neglect of which would be dangerous. Counter-irritation should not be used directly

over the inflamed bone, especially when scantily covered with soft parts, or in the neighborhood of a joint; it should not be used during active inflammation; it should not be established when suppuration already exists. It should be placed near enough to the diseased organ to exhibit its influence on it.

Above all our remedies the vis medicatrix natura or efforts of Nature to restore health is the most valuable. No efforts of the Physician should interfere

at such times. He should
always be ready and prompt
to assist Nature in her
good work