structure of the body, growing in the same proportion as the part of the body on which it is placed, as well described by Sir James Paget in his *Lectures on Surgical Pathology*, vol. i, page 49, where he observes that "the scar of the child, when once completely formed, commonly grows as the body does, at the same rate and according to the same general rule; so that a scar which the child might have said was as long as his own forefinger, will still be as long as his forefinger when he grows to be a man."

We have no evidence to show that the cicatrix-tissue is ever absorbed, or undergoes any process of wasting, by which the scar could be said to wear out; on the contrary, the rule appears to be, that the cicatrix, once formed, if even not more than a line in width, never wears out, but remains as a permanent tissue, renewing itself by assimilation and growing with the rest of the body.

There are two reasons for this permanency of cicatrix-tissue: 1st, that the tissue is sufficiently well-organised to be able to maintain itself in the general nutrition of the body; 2ndly, that the cicatrix-tissue is so widely different from the structure of the true skin, that it never can become assimilated to it, or resemble it, either in the naked eye or microscopic appearances.

CYANOPUON LARYNGIS: THYROIDITIS WITH BLUE SUPPURATION.

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THREE-and-twenty years ago, a case of mine was published in the *British American Medical and Physical Journal* for September, 1850, of what I then called cyanopuon, or cyanuret of iron in the purulent discharge occurring in chronic disease of the breast. The pus imparted a distinct dark blue colour to the linen and dressings, and afforded much interest at the time. In dwelling upon it, I entered into some speculations as to its origin, and gave a summary of the cases that had been published. That paper has been quoted, and is especially referred to in Mr. Holmes Coote's article, "Abscess," in vol. i of *Holmes's System of Surgery*.

In October, 1870, an instance more remarkable still came under my observation, and is unique in the annals of medicine; so much so, indeed, that it seemed to me desirable to place it upon record at once. Independently of the blue suppuration that was present, the pathological lesion was of great interest from its uncommon character, danger, and subsequent good recovery. The particulars are briefly as follows. A single lady, aged 27, consulted me on the 21st October, 1870, with the following history. She had been delicate about the throat for some years, although the general health had always been good. About six months previously, she had suffered from a severe cold, with aphonia for a few days; this was followed by tenderness and subsequent swelling over the right wing of the thyroid cartilage. The former subsided, but the swelling remained permanent, became rather hard, and was sensitive to the touch. About five weeks before I saw her, the swelling again became painful and increased further in size; she applied poultices to it with some relief, and, although it did not decrease nor subside, it became quite soft.

On presenting herself to me, a decided prominence was observed in the situation described, with distinct fluctuation, and the skin covering and surrounding it was discoloured of a brown and dark blue, as if from ecchymosis, but in reality not so. There was clearly an abscess present, consequent upon inflammation of the wing of the thyroid cartilage in the first instance; and the indication seemed clear enough to evacuate the matter with the lancet, although the propriety of doing so caused me some reflection; yet, if it were allowed to become chronic, the cartilage would be attacked and serious mischief might ensue. In the laryngeal mirror, the integrity of the larynx was seen to be perfect; and the voice was good, whether in speaking or in attempts to utter contralto notes. With a narrow sharp-pointed bistoury, a puncture was made, and a drachm and a half of pus was evacuated, of a dark blue colour, not quite so dark as Prussian blue, but more of an azure tint. The relief was decided, the swelling subsided a good deal, and bread-and-water poultices were prescribed until her next visit. A chemical examination of the pus yielded clear evidences of the existence of iron, by similar tests to those used in my first case. The patient had taken preparations of steel internally some years ago, but not lately; the discoloration of the pus, therefore, was due to some physiological change analogous to that which gives rise sometimes to indigo in the urine.

In the course of two or three days, the swelling of the abscess had greatly gone down, with some discharge of blue pus that stained the linen and dressings. On the 7th day, there was a little oozing only of a thin bluish pus, which tinged the linen of a fainter blue colour. At this time, the parts were a little swollen and indurated; the cartilage, however, did not seem to be involved, and there was no fœtor from the pus. By the twelfth day, the discharge had almost wholly ceased, with no discoloration at all; the general swelling had further subsided; the skin looked more natural, and of a better colour; a little tenderness was present over the abscess, the original seat of which seemed to have been beneath the perichondrium of the thyroid cartilage. On the twenty-fifth day, the opening had closed and all swelling had subsided, yet a little discoloration remained and the merest tenderness. She was considered to be cured. When seen on the subsequent February 1st—fourteen weeks after her first appearance—she was perfectly well and complained of nothing, nor was there anything to be seen beyond the slight cicatrix to mark the site of the abscess. The thyroid cartilage had escaped a great danger; for, although it must have participated to some extent in the inflammation which involved its fibrous covering, yet no subsequent symptom occurred to show that the cartilage itself was injured; and, as upwards of two years have elapsed, we may reasonably infer it has permanently escaped.

It may be observed, however, that suppurative inflammation of the external surface of the thyroid cartilage is extremely rare; and, when to this is added the transformation of the well-known yellow into a distinct blue pus, the case is invested with many points of interest, both in a physiological and pathological sense. Blue stains occasionally occur in the linen dressings, from chemical changes which pus sometimes undergoes, when the matter itself is not blue; and this, I believe, has been the experience of several surgeons, including the late Sir Benjamin Brodie. The actual blue colour of the pus within an abscess, however, is a phenomenon of the highest degree of rarity, although the nature of the pus is perfectly harmless. If iron in any form has been given, we can readily understand its presence as the result of certain well-known chemical changes; but, otherwise, we must look for an explanation in something more subtle and profound, involving a combination of certain elements to produce compounds analogous (as has been already stated) to indigo, which, in its composition, is wholly different from a salt of iron. If physiological chemists were correct in their views, that the source of the indigo-forming substance in the animal economy was or might be due to destruction of some of the proteine compounds, and more especially hæmatosin, then we have an explanation of the colour of blue pus; but, in the present instance, the pigment was due to a salt of iron, and not to indigo. Dr. William Bird Herapath brought an instance before the meeting of the British Association for the Advancement of Science at Bath in 1864, in which pus or the liquor puris was shown to contain blue pigment, and which he believed to be the first instance recorded of that character, whereas I gave a summary of ten cases in 1850. In his case, purulent secretions from the surface of an inflamed leg stained the clothes of a blue colour; whilst in mine the pus of an abscess was blue previously to being evacuated, and had been so for many days before, which is a wholly different thing.

The experiments to determine its nature were these.

1. Liquor potassæ, added to the blue pus, discharged the blue colour, which it does with Prussian blue.
2. The addition of dilute muriatic acid, for the most part, restored the blue colour, which it also does with Prussian blue.
3. Some of the pus was evaporated to dryness and ignited; the calx, acted upon by a solution of ferrocyanide of potassium, gave a distinct alteration of Prussian blue.

I may remark, that these tests are wholly different from those of indigo. Moreover, on boiling some of the blue pus with distilled water, filtering, adding an equal quantity of liquor potassæ, which removed the blue colour, and then, again boiling, a dark brown colour was produced, showing that sugar was present, a phenomenon that I was the first to demonstrate upwards of twenty years ago. Under the microscope, no granules of blue pigment were observed; but the pus-corpuscles seen were those of healthy pus, only coloured of a transparent beautiful blue colour, which was dispelled by adding a drop of liquor potassæ.

In my first paper, published in 1850, the chemistry of the subject was so fully gone into, as well as the consideration of pus of all colours, that it would be a needless repetition to go over the same ground in the present instance. Suffice it to say, that I place upon record a case thus far unique in its combination of thyroiditis running into suppuration, the pus being charged with a salt of iron, giving to it a decided dark blue colour.