

and no pain, seemed to show that nothing was interfering with the growth of the new tissue. But, after a time, I had to confess that this growth was making slow progress and that there was not in this mode of dressing any advantage as far as rapidity of healing was concerned.

As this method, with some modifications, is still under trial, I forbear saying more at present, except that its use in the dressing of compound fractures does away with the carbolic spray, and thus removes the difficulty which I have pointed out in connexion with the use of water. The next plan which I tried for the purpose of obviating the same difficulty was the dusting with a dry powder the large raw surfaces left by the destruction of skin from a burn. After the carron oil had been applied for the first four days, a powder composed of starch and oxide of zinc was dusted on the surface. Over this some carbolic gauze was lightly fastened, and the dusting was repeated night and morning. No washing or cleaning of the surface, beyond a removal of such of the scabs as appeared loose, was permitted. The result of this form of dressing has been very satisfactory, and is a decided advance in the treatment of burns and scalds.

Here, then, are two methods of avoiding the use of water in the dressing of wounds, both of which I have found lead to better results than when water, either by washing the surface or applying it as a dressing, has been used. It must not, however, be understood that I advocate the leaving of wounds uncleansed from dried loose scabs or decomposing pus. On the contrary, the skin round a wound should be kept scrupulously clean. There are other methods of carrying out the anhydrous dressing of wounds, such as the use in the first instance of collodion to close the wound, or of clotted blood, with dry lint superimposed, or of picked oakum or tenax. Under any of these a wound of moderate size often heals by first intention.

To sum up as shortly as possible, I would say that in the treatment of compound fracture, opening of joints, and large incisions, I advocate Lister's method with this modification, that the subsequent dressings after the first should be under the balsam spray rather than the carbolic spray, and that the material placed next to the wound should be dry, believing that the free use of the carbolic spray upon the wound, the washing out of the latter, as is too often done, with carbolic lotion, and the application of lac freshly moistened with carbolic lotion, all lead to a production of pus.

Next, that, as the almost equal success which is obtained in the hands of many surgeons from the use of Friar's balsam merely, in the dressing of small wounds, and even compound fractures, must be due as much to the avoidance of moisture, or rather of water, as it is to the antiseptic properties of the balsam, therefore it is a strong argument in favour of our being very chary in the use of the former.

Thirdly, that the application of the antiseptic principle in the dressing of burns, scalds, and lacerated wounds, with loss of skin, has led to no better results than many of the other methods in vogue.

And, finally, that in so far as we can keep an abraded surface free from all external agencies, just so far shall we succeed in facilitating the healing process. Amongst the external agencies which are injurious water takes a more prominent position than the atmosphere.

Therefore, the direction in which further advances in the dressing of large lesions is likely to be successful is certainly in the avoidance of heat and moisture.

Liverpool.

ON IDIOPATHIC (PERNICIOUS) ANÆMIA.

MICROSCOPIC CHARACTER OF THE BLOOD.

By G. MACKERN, M.R.C.S., AND HENRY DAVY,

GUY'S HOSPITAL.

THE subject of these observations was a man aged fifty-three, under the care of Dr. Moxon, with whose kind permission we use the case. He was admitted on Sept. 23rd, 1876, and presented all the symptoms of idiopathic anæmia in a marked degree. There was great indisposition to exertion, with breathlessness and fainting on attempting it; great debility and loss of appetite; the whole frame

was flabby; skin smooth, white and waxy; that of the face having the peculiar yellow tinge of lemon skin; lips and tongue pale and bloodless; pulse large and remarkably compressible, and a soft systolic murmur was present both at the apex and base of the heart. At times he became extremely low, wandering in his mind, picking the bedclothes, rattlings in the throat, and at these times it was interesting to remark how very yellow he became. He died quietly on November 24th, the post-mortem examination confirming the diagnosis, no lesion beyond œdema of the bases of the lungs being found.

The blood was examined microscopically many times and under varying conditions, when the man's temperature was 102°, 101°, 100°, 99·2°, when he was very low, and when he rallied, and precisely identical results were obtained with one exception. We would remark that this one exception was on an occasion about twenty-four hours before death, when patient's general condition appeared better than usual, and after he had been taking phosphorus for some days; on this occasion the blood presented the appearances to be described in a modified degree.

As to the *modus operandi*, great care was taken to eliminate sources of error due to coagulation, evaporation, and variations of pressure, all of which might tend to alter the physical state of the blood-corpuscles. Observations were made with a Stricker's and other warm stage, and counter experiments were made in cases of ordinary chlorotic anæmia, in a case of extensive lymphadenoma, and in one of advanced phthisis with a temperature of 100°, as an example of wasting disease.

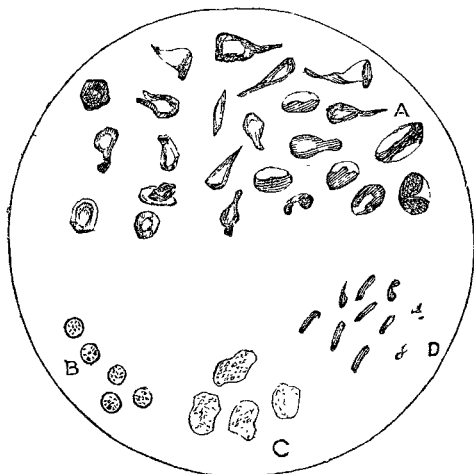
The examinations were made in the morning by natural light, under a Hartnack, oc. 3, ob. 8, and the observations confirmed by several competent observers.

The appearances to be now described were observable as soon as the specimens were under observation, but were more marked about a quarter of an hour after the blood had been withdrawn from the body, although carefully protected from evaporation, &c.

1. The *red corpuscles* showed no tendency to collect into rouleaux, but formed instead masses of irregular shape. They were considerably reduced in number as compared with other specimens, but no actual calculation was attempted. They were very variable in size, and showed the greatest diversity of form. But few of normal shape and size could be seen in any one field; some were oval, others spindle-shaped, whilst many more could be referred to no particular shape. As regards size, some were much larger than normal, and this is especially true of those whose shape was much altered; others, again, were much smaller than normal, with round outlines for the most part, but many of these also were altered into the shapes before described. In all the abnormal corpuscles the normal uniform aspect was so far changed that the yellow substance appeared to be collected in some parts of the corpuscle, so that other parts were quite clear and transparent. This was especially true of those corpuscles from which processes passed out, the yellow colour of this latter part being in nearly every case more intense than that of the rest of the corpuscle. In no case did we actually observe any change in shape to take place, although some specimens were observed for an hour and a half on the warm stage. We believe this change of aspect, which we have described and figured, to be explained, and only to be explained, by a separation of the hæmoglobin from the stroma, or, as Brücke has termed it, of the zocid from the œcoid. We compare this separation to that produced by the action of 2 per cent. solution of tannic acid on normal blood, in which, however, an astringent is acting on both the stroma and the hæmoglobin. In the case we have been describing, we believe that the stroma is abnormally soft (being perhaps very young, or else chemically altered); and the tendency of the corpuscles to assume abnormal shapes bears out this hypothesis; and this state of the stroma allows the hæmoglobin readily to coagulate and collect in parts, giving them the appearances we have described.

2. The *white corpuscles*. These were of two sizes, both of which could sometimes be observed in the same field. More often, however, the smaller corpuscles alone could be seen. There were (a) *large*, of similar appearance to those found in normal blood; never more than two were observed in one field, and in many fields they were quite absent. Examined on a warm stage they showed good amoeboid

movement. (b) *Smaller*: These, much more numerous than the above, could be seen in nearly every field. Sometimes two or three could be observed at once, less often as many as seven, eight, or nine could be counted in one field. They were smaller than the red corpuscles of normal size,



The above woodcut roughly illustrates the description of the blood.
A. Altered red corpuscles: the shaded portion representing the yellowish-red hæmoglobin; the non-shaded part, the lighter and in many cases perfectly clear stroma. B. The smaller white corpuscles. C. The larger and apparently normal white corpuscles. D. Yellowish-red homogeneous droplets, more or less numerous in every field.

and might be estimated as about one-quarter of the size of the large ones above described. They were granular, sharply defined, and looked more like free nuclei. Some were kept under observation for an hour and a half on a warm stage, but they exhibited no amœboid movement.

Floating about in every field were a larger or smaller number of bright homogeneous droplets, of irregular shapes and of a yellowish tinge.

Note.—Quinke, Byrom Bramwell, and others have described the shapes of the red corpuscles in idiopathic (pernicious) anæmia; but no mention is made of the separation of hæmoglobin from stroma—i.e., the disintegration of those important oxidising elements of the blood which we certainly found in the case we have now described.

A Mirror

OF

HOSPITAL PRACTICE,

BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

CHARING-CROSS HOSPITAL.

WOUND OF RIGHT UPPER EYELID FROM THRUST BY AN UMBRELLA-FERRULE; FRACTURE OF ETHMOID; LACERATION OF BRAIN; DEATH.

(Under the care of Mr. BARWELL.)

For the following notes we are indebted to Mr. Biden:—

B. S—, aged twenty-three, was taking part in a street brawl on Feb. 3rd, when he received a thrust in the face with the point of an umbrella, which knocked him down. He was picked up bleeding profusely from a wound of the right eyelid, but he was sensible, and requested to be taken to the hospital. About five minutes after the accident he was led, staggering as though under the influence of drink, into the accident room. His face was very pale, and the right side of it was partially concealed by a handkerchief soaked in blood, which he held up to his eye. On the removal of the handkerchief a circular lacerated wound, with inverted edges, and about the size of a sixpence, was discovered in the upper eyelid, immediately below the supra-orbital notch. The supra-orbital artery had evidently been divided, but the bony margin of the orbit and the eyeball

were both untouched. The pupils were normal, and responded to light. He had no bleeding either from the ears or the nose; he had not been sick; he could answer questions when asked in a loud tone, but complained of pain in the head. The pulse was quick and feeble. He was forthwith sent to bed, and immediately fell asleep, and did not wake for several hours. When he awoke he became very restless, tossing about in the bed from side to side, and after continuing in this state for about ten minutes, he vomited about six ounces of black coagulated blood, after which he became quiet. He vomited three times more during the night, each time bringing up about an ounce of blood. After his first sickness blood commenced to ooze from the right nostril, and continued to do so throughout the night.

Feb. 4th—11 A.M.: Had just vomited about an ounce of black coagulated blood. He was lying listlessly on his left side, in an attitude of general flexion. Could be roused with some difficulty, and gave his name; afterwards relapsing into a semi-conscious condition with a gesture of annoyance. Refused to take any milk or beef-tea. His eyelids were firmly closed; pupils equal, rather contracted, and responded slightly. Some blood about the nostrils. Respiration quiet; no stertor; pulse about 70, soft and full; temperature 104°. No paralysis; but when spoken to or otherwise disturbed he had clonic spasms of the arms and legs. Micturated consciously.—12 noon: Could be roused only with great difficulty. Would not give his name. Very restless, tossing about in bed. The spasms still continued, but less regularly and with diminished intensity. Pulse not so full, and harder; temperature 104°. Had vomited no blood since 11 A.M.—2 P.M.: Could not be roused; very restless. Eyelids still firmly closed, but pupils dilated, and still responding. Pulse quicker, smaller, and weaker; skin dry; temperature 105°. Spasm of limbs ceased.—4 P.M.: Lying on his back; face getting livid. Eyelids half open; pupils contracted, and did not respond. Slight stertor. Respiration slow and shallow, with an occasional deep sigh; pulse small, quick, and feeble; skin dry; temperature 104°. The pulse and respiration gradually became more feeble, and he died at 4.10 P.M. (fifteen hours after the receipt of the injury.)—5.10 P.M.: Temperature 103.6°.

Autopsy, forty-six hours after death.—The body was that of a sound and strong young man. No morbid appearance, except a small wound in the right upper eyelid, in which a probe passed backwards and slightly inwards. The calvaria being removed, a quantity of dark blood was found effused under the arachnoid, and covering both lower surfaces of the anterior lobe, more especially on the left side. The brain being removed, a comminuted fracture was found on the right cribriform plate of the ethmoid, and the adjacent part of the frontal orbital plate was chipped. The top of the crista galli was broken off. On examining the brain there was found on the right side nothing abnormal beyond the subarachnoid effusion. On the left side, involving the olfactory tract and groove, was a laceration of the brain which at first appeared quite superficial, but on further examination was found to pass deeply into the hemisphere, and to end probably close to the anterior cornu of the lateral ventricle, which was full of blood.

Mr. Barwell gave the following interpretation of this injury. He thought that the small punctured and not lacerated wound of the eyelid showed that the first impulse of the thrust was received straight from the front, and that a rapid impulsive turning away of the head caused the ferrule, which of course continued in the same course, to be received in an oblique direction inward, and thus the weakest part of the orbit, the os planum, was presented to the force. The train of symptoms, though obscure, was full of interest.

GREAT NORTHERN HOSPITAL.

CASE OF FETID DISCHARGE FROM NOSE, TREATED BY A NEW OPERATION.

(Under the care of Mr. HARRISON CRIPPS.)

A. B—, aged thirty, probably syphilitic, struck the bridge of her nose five years ago in falling against the corner of a table. She suffered considerable pain at the time, and hæmorrhage was profuse. The nose remained tender and swollen for two or three months, and the nasal