chemist, Mr. E. R. Dovey, who also assured us that all other poisons were absent, so far as chemical analysis could show.

As regards the rash, those produced by quinine, belladonna, iodides, etc., were carefully eliminated. Typhus fever was not considered in view of the previously mentioned findings—bearing in mind that the rash never appears on the face in typhus, whereas in the present case there was a marked diffuse haemorrhagic rash, and noting that the spleen was not enlarged, leucocytosis was absent, and marked leucopenia was present, with general anaemia.

The total red blood corpuscles numbered about 2,000,000 per c.mm. The white cell count was constantly about: polymorphs 26 per cent., lymphocytes 73 per cent., and mast cells 1 per cent. No eosinophils were seen at any time, and no malarial parasites were detected.

The possibility of mechanical purpura of pregnancy was excluded on the grounds that there was no evidence of circulatory obstruction at all. Neither the uterus nor the foetus showed anything abnormal.

Microscopical sections were made from various parts of every organ, but all that could be noticed was simple haemorrhagic infiltration of the various organs, and nothing more.

Since one of us is now in England, and can deal with any correspondence, we shall be grateful for any criticisms and suggestions which may throw further light upon these cases.

We wish to take this opportunity of thanking the members of the University and Government staff who so kindly regularly assist us in our investigations.

THE BASIC BLOOD PRESSURE IN RAYNAUD'S DISEASE.

BY

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THE basic blood pressure is that pressure exerted on the blood by the contractile walls independently of the additional pressure due to the systolic contraction of the heart. During estimations of the systolic pressure, when the inflated armlet prevents the systolic pressure from being transmitted beyond the point of application, the blood in the vessels beyond the armlet is under a basic pressure which can be estimated by my method described in the *Journal* of February 8th (p. 242).

After examining a large number of apparently healthy men I find that the normal basic blood pressure is about 50 mm. of mercury. When the second sphygmomanometer points to 70 mm. it is evident that the pressure is too high, and that the cells in the blood are being compressed to an extent which handicaps them seriously in their work. Variation of pressure on the blood disturbs the surface tension, osmotic effects, and metabolic reactions of its cells, and a permanently high figure has a serious action on the cellular actions, reactions, and interactions, with a consequently marked effect on the general nourishment of the body. Furthermore, if the pressure is very high the patency of the vasa vasorum is reduced, and the blood supply to the muscular fibres of the arterial walls is hindered to a serious extent. Under such circumstances it follows that these arterial muscular fibres are poorly nourished and their movements become sluggish. This, I suggest, is the state of things in a patient suffering from Raynaud's disease.

In cases of this disease which I have examined the systolic pressure is high, but the basal blood pressure is raised disproportionately, and I think most stress should be laid on the disproportion. In one severe case of a woman, aged 42, the systolic pressure was 200 mm. and the basal blood pressure 100 mm. This patient's nose and hands were badly affected, and her general health was so interfered with that she could not keep herself warm by the exertion involved in routine work.

My findings are increased in value as a result of the good work by Sir Thomas Lewis and Professor William

Kerr, to which reference was made in the *Journal* of July 20th, 1929 (p. 111), and of January 11th, 1930 (p. 82). These observers draw attention to the fact that undue cooling of the hand failed to bring on an attack, because, as they point out, "the minute vessels of the skin of these patients react, as do those of normal skin, to excessive cold by dilating."

I venture to suggest that what really happens is this: in Raynaud's disease the basal blood pressure is high, the blood cell reactions are hampered, and there is a hindrance to the entry of this blood to the vasa vasorum, with the result that the muscle fibres are badly supplied with nourishment and are therefore not able to react satisfactorily to ordinary stimuli. Excessive cold, however, is sufficiently stimulating to make even these sluggish muscular fibres react, and, as Lewis and Kerr state, "the occurrence of a full cyanotic tint is not observed." Their observations, it is interesting to note, have made them come to the same conclusion as I have—that there is an abnormality of the vessel, and also that the closure is not reflex.

I feel inclined to differ from them when they use the term "spasm," which seems to suggest a hypercontractibility of the muscular fibres of the arterial wall. Such a hypercontractibility is not what one would expect to find in a badly nourished muscle, but rather a sluggishness of the movements. As I pointed out in the *Practitioner* of May, 1929; "To suggest that the diseased muscular fibres of the auricle are capable of developing fresh centres of excitation seems contrary to the usual rule of dying matter, whereas on the other hand the diseased fibres forming the thin wall of the auricle lend themselves to be thrown *passively* into a state of tremor." In Raynaud's disease the greater the heat applied within reason, or the higher the temperature of the room, the sooner do the arterial muscular fibres move, with a consequent dilatation, because the general raising of the temperature has helped to reduce the basal blood pressure to such an extent as to allow a freer entrance of blood into the vasa vasorum.

The value of a study of this sort is not so much in connexion with Raynaud's disease itself, since, save for the milder forms, it is a rare complaint, but rather because it helps to emphasize one or two important principles, the first being the importance of a proper blood supply to the muscular fibres of the arterial walls, and, secondly, the blood pressure taken over the arm is not necessarily the pressure on the blood in all parts of the body. The greater liability of the coronary arteries to disease is evidence of the fact that the blood supply of their muscular fibres is often inadequate; as a consequence there is a sluggishness of their movements which gives rise to many of the abnormal contractions of the heart. It is fairly obvious and easily understandable that, owing to the powerful contractions of the heart muscle, the pressure in the coronary arteries must be the highest of all.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE SAUERBRUCH-HERRMANNSDORFER-GERSON DIET.

THIS subject is in the forefront of medical interest and discussion in Germany at the present time, and there are many large institutions in which a special kitchen has been provided for the nutrition of patients on these lines. The work of Sauerbruch and Herrmannsdorfer extends over a period of five years; that of Gerson has been still longer. It is advisable to point out that the claims made by Sauerbruch and Herrmannsdorfer refer to the treatment primarily and mainly of surgical tuberculosis—that is, of cases of lupus, and tuberculosis of the skin and bones, as well as of the lungs. Stated shortly, these claims are largely the results of observations made by Herrmannsdorfer as to the influence of diet in the healing of wounds, and of the special value of the salt-free diet, and a diet