portant difference, however, as regards local bleeding, between an inflammation of some internal organ and one on the outer surface of the body. In the latter case there is no difficulty in understanding how local bleeding diminishes the quantity of blood in the inflamed part, but it is not so in the former. When, for instance, you apply leeches to the chest in a case of pleurisy, you draw blood from the skin, but how is this to relieve the inflamed pleura? The opponents of blood-letting say that the vessels of the pleura can only be affected through the general circulation, and that the amount of blood drawn by the leeches is much too small to operate beneficially in this way: yet, on calm consideration, you must see that it is not necessary, for local depletion to act beneficially, that it should do so through the general circulation. It may do so through the nearest arterial trunk which is in common to the external surface and the inflamed organ. The intercostal artery can only transmit a certain amount of blood, and when blood is made to flow from its superficial branches less will go to the deeper branches. But whatever be the explanation, there can be no doubt of the clinical fact, that the intensity of inflammation may often be moderated by local blood-letting, and this, too, without any injury to the patient. In inflammations, for example, of the liver or intestines, I have repeatedly observed the most marked and immediate relief follow the application of leeches to the abdomen or around the anus. Still you must not have recourse to blood-letting in every case of inflammation. It is only in the early stage of inflammation, or when it is advancing, that you can expect it to do good. You must also abstain from blood-letting in persons of debilitated constitution, or when the inflammation has been excited by an animal poison or some other morbid condition of the blood.

b. Cold.—The common practice in this country is to apply moist heat to an inflamed part on the surface of the body from the very commencement; but it does not appear to me that any scientific reason can be given for the practice. Heat increases determination of blood to a part, and therefore seems calculated to increase the inflammation; whereas cold constricts the vessels and diminishes the supply of blood, and in Germany more especially has been found most efficacious in subduing inflammation. On this subject I would advise your reading an admirable essay by Professor Esmarch of Kiel, entitled *On the Use of Cold in Surgery*.^{*} Professor Esmarch declares that of all remedies for surgical inflammations it is the most important, and that without it he would rather not be a surgeon. The continuous application of cold by means of ice-bags has also been found very efficacious in some inflammations which come under the care of the physician, as in rheumatic inflammation of the joints, and inflammations of internal parts which are near the surface, as the pericardium and peritoneum. But in deep-seated inflammations, cold to the surface may act injuriously by driving blood from the skin to the inflamed part. Cold is also contra-indicated when the inflammatory process is subsiding, and when we have to deal solely with its products. Under these circumstances—

c. External Heat, in the form of poultices and fomentations, will be preferable, by means of which we hope to produce a derivation of blood from the inflamed part to the skin.

d. Counterirritation by sinapisms, turpentine-stupes, and blisters, acts in a similar manner to external heat, and is often of great utility. One caution I would give you respecting blisters: they are often applied in the early stage of inflammation; and when this is near the surface, as in pleurisy, pericarditis, or peritonitis, the irritation may be propagated inwards and increase the mischief which they are intended to allay. It is in chronic inflammations that blisters are most useful.

e. Purgatives were at one time used to a mischievous extent in all inflammations; but in inflammations of certain parts of the body they certainly act most efficaciously, by causing a derivation of blood from the inflamed part. In inflammatory affections of the liver, the best treatment is often free purgation. Purgatives in moderation are also useful as one means of eliminating from the body the products of inflammatory pyrexia.

f. Position may modify the amount of blood in any inflamed part. When a limb is inflamed, you take care not to let it hang down; when there is inflammation within the cranium, it is well to keep the head raised; and when there is inflammation of the spinal cord or its membranes, the patient had better not lie on his back.

g. Belladonna, when applied locally to an inflamed part, causes constriction of the vessels, diminishes the supply of blood, and often gives great relief; but in the case of internal inflammations there is no reason to think that belladonna entering the blood would exert its constricting effect on the vessels in the inflamed, in preference to those of any other part.

5. You will treat the pyrexia accompanying inflammation according

to the principles laid down in my last lecture. You will remember that *aconite* is often of great value for reducing the pulse and temperature in the pyrexia of inflammation, and that *antimony* is especially useful in the same way in inflammations of the mucous membrane of the air-passages, where it also appears to relieve congestion by promoting free transudation to the free surface of the inflamed membrane. As I have already told you, antimony is contraindicated when the heart's action is weak. As regards diet and stimulants, you must be guided by the same rules in inflammation as in pyrexia. In the advanced stages of inflammation, and especially when there is suppuration, ulceration, or gangrene, it will be necessary to give abundance of nutritious food and to stimulate freely. Under these circumstances, also, benefit will be derived from quinine, iron, and the mineral acids.

6. *Sedatives*, but particularly *opium* and its preparations, are often of great use in inflammations, for relieving pain, procuring sleep, keeping the inflamed parts at rest, and rendering them less irritable. In acute inflammation of the peritoneum, opium in large and repeated doses is the remedy on which we mainly rely; but opium in any form ought never to be given in inflammation of the kidneys, and only with the greatest caution in inflammatory affections of the lungs. In the former case, it increases the difficulty which the inflamed kidneys have already to contend with in eliminating the products of pyrexial metamorphosis; in the latter, it leads to the accumulation in the bronchi of inflammatory products, and thus favours a fatal termination by apnoea.

7. Lastly, in the treatment of inflammations you must ever keep in view the dangers likely to arise from derangement of the functions of the inflamed part. In gastritis you will beware of irritating the stomach by drugs or by inappropriate food or stimulants, and in extreme cases you will give nutriment for a time entirely by the rectum; in enteritis you will check diarrhoea; in laryngitis you will be prepared to admit air to the lungs by tracheotomy; in accumulations of inflammatory products in the pleura you will consider the propriety of paracentesis; and when the lungs are so extensively inflamed or congested that the portion which remains free does not suffice to transmit the blood of the entire body, and the patient is threatened with asphyxia, you must not scruple in having recourse to venesection.

ON THE ELIMINATION OF MORBID POISONS.

By J. G. FRENCH, F.R.C.S., Surgeon to St. James's Infirmary.

JUDGING from the correspondence in medical journals, on the Elimination of Morbid Poisons, there appears to be a strange misapprehension of that subject.

The elimination of a morbid poison simply illustrates a phenomenon in natural history, which may be termed the force of reparation. The existence of such a force is as certain as that of gravitation, electricity, or any force whatever; and it may be defined as that active power by which all lesion of animal structure is repaired. Let us take, as an instance, small-pox. When the blood is impregnated with this poison, the elimination of the poison to the surface becomes as much a natural process as does the elimination of a foetus, at the period of maturity, from an impregnated uterus; but as, in the use of analogy, some minds are apt to notice only the point of difference where the point of resemblance alone is intended, it may be well to remark that the point to be observed here, in both these instances, is the consummate intelligence which is displayed by the adaptation of means to an end.

I have been convinced, by direct clinical observation during a period of forty years, that, whenever the force of reparation is naturally evinced by a process of elimination, any attempt to bring about that process artificially is simply an error. Therefore, to expect benefit to accrue from the application of croton oil, as alluded to by Dr. Barclay, in the JOURNAL of 10th February, would be as absurd as to expect that a performance on Paganini's fiddle, by an unskilled hand, would be the music of Paganini.

It appears to me that the use of eliminative medicine is only applicable to those cases where such action, as is sought for by the aid of remedies, is wanting naturally; for example, it is a fact that all lumbago is curable by cathartics; and the knowledge of this fact averts a large amount of suffering and of loss of time, while ignorance of it entails corresponding disadvantages.

If we limit our exertions to the strictest attention to the comforts of our patient, we shall prove more useful to him than if we indulge in wild speculation; and, if we succeed in rendering an intelligible interpretation, by careful study, of the elaborate process which takes place in the interval between the incubation of the virus of small-pox and the maturity of its eruption, we shall add to the sum of human knowledge.

^{*} Translated by Dr. Edmund Montgomery for the New Sydenham Society, 1861.