-their action, that up to comparatively re-nt date little was known of it as of satisfac-ry character. Previous to the employment f the microscope as a means of research, our nowledge of the inflammatory process was f the crudest kind; and even at this time, otwithstanding the labours of many observ-: it cannot be said that the subject is by y means exhausted. Much, however, has n done in the present century to elucidate is subject, and we are now possessed of in-rmation which will enable us to follow with considerable degree of accuracy the complex enomena which constitute inflammation. nd here, at the outset, it may be observed at there is nothing peculiar in the inflam-atory process apart from the ordinary erations going on in the body. Inflamma-n is a vital process in the same sense as the retion of bile or of urine is a vital process. s we shall see further on, inflammation of a rt is dependant on the operation, not of reign and extraneous forces, but of the or-nary and innate vital powers. If therefore, knew the *modus operandi* of the vital wers in the ordinary or healthy functions a part, we would also know the manner in ich the vital forces act in inflammation. is owing to this circumstance, viz., that the es at work in a state of health are the ne as those in a state of disease, that phys-ogy and pathology are closely connected d mutually illustrative of each other. In-ed, properly speaking, there is no such ence as pathology; it should rather be led pathological physiology. The differ-e, therefore, between a morbid and a lthy process is one not of a kind, but of gree. There are some processes, however, led morbid, which considered in themselves perfectly healthy, but are regarded as rbid, because they take place at an impro-place.

ls health and disease are merely modifica-ns of the same state, and pass gradually o each other, it is impossible to draw a rp boundary line between them; for this rea-a strictly scientific definition of health or ase cannot be given. For practical pur-es, however, a part may be said to be diseased en the processes going on in its interior er endanger its structure or jeopardise the of the whole organism.

order to arrive at a knowledge of the nomena of inflammation, it will be neces-y to examine with the microscope the web he frog's foot, both in its healthy condition when irritated in various ways. If you e the web of a living frog under a micros-which magnifies 250 or 300 diameters, bring one of the arteries into the focus of instrument, you will observe the blood ing along so rapidly that it is impossible distinguish any of its constituents. If, however, you follow the artery, it will be found to break up into numerous small vessels of uniform size, in which the current of the blood is instantly diminished to such a degree that you can readily see the constituents of that fluid. The combined calibre of the capil-laries in which an artery terminates is consider-ed greater than that of the artery itself, and con-sequently the rapidity of the current is immedi-ately diminished in accordance with the well-known hydrostatic law, that the rapidity of the current diminishes in proportion to the width of the steam. Even in capillaries, however, the rapidity of the current stream is considerable. The corpuscles pass with great facility through the vessels, and do not exhibit any tendency to adhere to each other, or to the wall of the vessels. This is true both of the red and colourless corpuscles. It is usually stated that the colourless corpuscles move sluggishy along the *still layer*, as it is called, or the fluid portion of the blood, which is in contact with the walls of the cap-illaries. This is not the case, and, as already mentioned, the colourless corpuscles pass along as rapidly as the others. With regard to the terminal arteries, they are almost en-tirely composed of muscular fibres. These fibres belong to the plian or unstriped variety. They are arranged in one or more layers, ac-cording to the size of the artery, either circu-larly or in a spiral manner round the vessel. When they contract, therefore, they have the power to diminish the calibre of the vessel, or, if the contraction be strong enough, to oc-clude it completely. In this way the small arteries are able to regulate the supply of blood to a part. In addition to their con-tractile properties, arteries are also endowed with elasticity. Under ordinary circum-stances, the arteries possess a certain medium size; but when, as sometimes happens, the restraining influence of the muscular fibre is removed, the vessels enlarge from the distend-ing force of the blood, so that a much larger quantity than usual of blood finds its way in-to the part at the same time, owing to the unrestrained flow of blood. The capillaries beyond enlarge, and the velocity of the cur-rent is increased. When the muscular fibres again contract, the artery resumes its original size. The amount which passes through the artery, as well as its velocity, is diminished, and if the contraction proceed far enough, so as to occlude the vessel, the circulation through the artery will be stopped altogether. With regard to the capillaries of the numer-ous small vessels in which the arteries termin-ate, they are composed of a thin homogeneous membrane, in which nuclei of a flattened form are embedded at intervals. They are posses-sed of considerable elasticity; but, unlike the arteries, are completely destitute of contractil-ity. Any alteration in size of the capillaries