

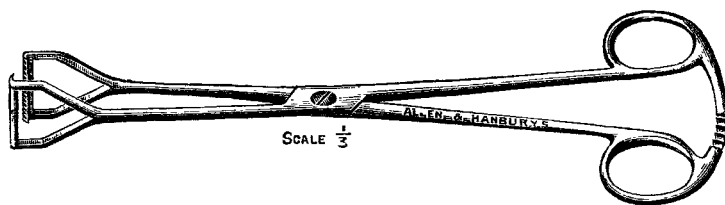
Antidromic Fibres in the Frog and their Influence on the Capillaries, by Yasukazu Doi.—On the Permeability of Epithelial Layer of the Bladder to Water and Salt, by Rinnosuke Shoji.—**Cardiac Tetanus**, by W. Burridge. Under certain conditions the superposition of contractions and a condition approximating to the tetanus of skeletal muscle is possible in the heart—e.g., poisoning of heart with muscarine or chloral hydrate. The author's experiments on the perfused frog's heart were performed on hearts subjected only to alterations in the proportions of their normal environment. They indicate that the greater richness of cardiac muscle in phosphates as compared with skeletal muscle is an important factor in determining its mode of behaviour. The author describes the chemical constitution of the perfused fluids which enabled him to obtain a preparation which can be fatigued, thrown into tetanus, and shows von Kries's phenomenon, such as are manifested in skeletal muscle. His experiments indicate that differing capacities to adsorb different elements of a common environment may be an important factor in determining differences of muscular behaviour.—Variations in the Resistance of Protozoan Organisms to Toxic Agents, by R. A. Peters. The author experimented with a culture of the ciliated protozoan colpidium, using a heat-standardised solution of HgCl_2 as the toxic agent. The animals die in such a way that there is a straight-line relationship between the time and the logarithm of the percentage of survivors for a large part of the death process. The apparent logarithm law can be interpreted in terms of the variation in the resistance of individuals of the protozoan culture to the toxic agent.—The Action of Certain Serum Constituents upon the Heart and Plain Muscle, by A. J. Clark. Various preparations and derivatives from sheep's serum were used on isolated tissues of the frog and mammal. The action of the serum is the sum of the serum proteins and of the alcohol-soluble constituents, but these two sets of substances have totally distinct actions. The serum proteins produce strong vaso-constriction and have little action upon other tissues, while the alcohol substances produce slight vaso-dilatation, a great augmented effect on the frog's heart, a moderate augmented effect upon the frog's stomach and the mammalian gut and uterus, but no effect upon the mammalian auricle. The mode of preparing the serum derivatives probably removed such substances as adrenalin and histamine that might be present in the serum. The action of the alcoholic extract of serum and of lecithin in stimulating plain muscle indicates that an alcoholic extract of any tissue is likely to cause stimulation of plain muscle and that this general action must be distinguished from the specific action of special glands such as pituitary extract.—The Effect of Alterations of Temperature upon the Functions of the Isolated Heart. By A. J. Clark.—Physical Exertion, Fitness, and Breathing, by Henry Briggs. Experiments were made to determine the oxygen consumption of persons engaged in different kinds of physical work. The methods and apparatus used are described, including ergometer tests and the results of walking and climbing experiments. Experiments were made on men climbing the main incline in a limestone mine in Midlothian, while breathing normal air and while breathing oxygen. Physical work is easier to unfit men when oxygenated air is breathed than when normal air is breathed, but no such difference is to be observed in fit men. When exertion of steadily increasing magnitude is undertaken the expired CO_2 percentage first rises and then falls. The load at which that percentage is a maximum the author calls the "crest-load," which also demarcates between normal loads and overloads, but the demarcation line is not constant. On an overload even the fittest man derives benefit from breathing "enriched air." The benefit of breathing enriched air when doing physical work is limited to air containing about 60 per cent. oxygen. Enrichment above that proportion has no effect during exertion except on unfit persons. Tables showing the oxygen consumption when walking, running, climbing, or doing ergometer work are given.—Other papers deal with Nitrite Methæmoglobin and Related Pigments, by H. Hartridge. The author gives evidence in favour of this substance being a definite chemical compound. The use of thermionic valves—a well-known piece of mechanism used with wireless apparatus and long-distance telephony—in combination with the string galvanometer, as applied to obtaining an electro-cardiogram, is described by I. de Burgh Daly and K. E. Shellshear. H. Hartridge makes an interesting suggestion as to "the ear as morphologically an apparatus for perceiving depth below sea-level," which was fully referred to in an annotation in THE LANCET last week.

THE Medical Branch of the Board of Education has been transferred from Cleveland House, St. James's-square, London, S.W., to Bridgewater House, Cleveland-square, London, S.W.1. (Telephone: Gerrard 3410.)

New Inventions.

IMPROVED DUVAL'S FORCEPS.

WHEN using Duval's special lung forceps in chest cases during the war I was impressed with their extremely sensitive and at the same time assured non-slipping grip, and came to employ them largely in abdominal surgery, where their tenacious but delicate hold proved invaluable, notably for holding or retracting the uterus, appendages, cysts, small tumours, and even gut when applied over gauze. The original model has a triangular head, of which the angles are too prominent and the bite wider than necessary. I have therefore modified it (see illustration) by removing the sharp angles of the jaws and



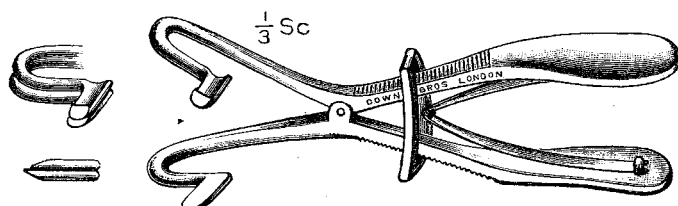
increasing the length of the instrument, thus making it more suitable for deep abdominal work. The bowed end lock prevents sutures getting caught up between the finger rings as in the ordinary pattern of forceps.

Messrs. Allen and Hanburys, of 48, Wigmore-street, London, W., are the makers of the instrument.

BRYDEN GLENDINING, M.S. Durh., F.R.C.S. Eng.
Aspley Guise, Beds.

AN IMPROVED MOUTH-GAG.

THE frequent difficulty of inserting the tooth-plates between the teeth in an emergency as well as the liability of the gag to slip forward and outward when they open the jaws are overcome entirely by the mouth-gag illustrated. Its chief features are as follows:



There are projections extending inwards from the tooth-plates; these are set at a knife-edge and in cases where patients are anaesthetised with their jaws closed the gag can be inserted quickly and easily between the teeth and the mouth opened. The advantages of this non-cutting knife-edge must be obvious to all anaesthetists; and in cases for dental extractions, particularly where the prop, which is often used, fails or falls out, it is specially useful. With this gag the prop can be dispensed with for dental extractions. There are ridges, or lips, at the posterior and inner edges of the tooth-plates, and these effectually prevent the gag slipping forwards and outwards when the mouth is forced open. There are no ridges on the anterior and outer edges, as the gag when opened does not tend to slip backwards or inwards. The angles and length of the gag are so arranged as to give the greatest leverage possible combined with strength and lightness. The handle is broad and concave, and facilitates the opening of the gag, as it provides a large broad surface for the hand.

There are fine serrations on the ratchet and these allow the gag to be fixed open in any desired position. It is unnecessary and undesirable to use rubber to cover the tooth-plates; the spring is detachable and easily cleaned.

The instrument has been made for me by Messrs. Down Bros., Ltd, St. Thomas's-street, London, S.E.

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