TECHNIQUE OF PASTEURIZATION

Pasteurization. By Harry Hill, F.R.San.I. (Pp. 152. 10s.) London: H. K. Lewis. 1943.

Much has already been written about the public health aspects of pasteurization, and convincing evidence has been brought to show the need for heat treatment of milk in this country if a great deal of unnecessary disease is to be prevented. What is required now is a small book on the technique of pasteurization for the use of plant supervisors and operators, for medical officers of health and sanitary inspectors, and for laboratory workers in the public health field. The small volume by Mr. Harry Hill entitled *Pasteurization* goes some way towards meeting this need. The author sets out to convince the reader of the necessity for pasteurization, and then goes on to consider the various processes by which pasteurization of milk may be effected. Neither of these aims is achieved with complete satisfaction. The discussion on the public health aspect is too condensed to be convincing, and the description of pasteurization technique is too general to be of much help to those who already have some knowledge of processing but would like a great deal more. It is curious that the author should have attempted this part of his task without including a single diagram, chart, or photograph in the book, and only three tables. Everything is left to the reader's imagination—the appearance, size, and lay-out of pasteurizing equipment, the internal structure of rotary pumps and of plate and tubular heaters, the design of the different types of bottle-washing machines, the relation between temperature and creaming capacity, and numerous other practical points for which simple textual description is inadequate. However, for those who want merely a general idea of the methods by which milk is pasteurized the book will be found of value.

Notes on Books

Mr. H. C. RUTHERFORD DARLING'S handbook *Surgical Nursing and After-treatment*, first published 26 years ago, has now reached an eighth edition (J. and A. Churchill; 12s. 6d.). In his preface the author acknowledges the co-operation of his colleagues at the Prince Henry Hospital, Sydney, for many hints and suggestions in revising his text and bringing it up to date. Admittedly surgical nursing is best learnt by actual experience in a well-equipped modern general hospital; but practical knowledge needs reinforcement, and the purpose of this little book is to elucidate the details and to reduce the duties of a nurse to a state of orderly sequence, so that practice and theory may be integrated. Much of the information and guidance in its 660 pages will prove helpful to surgical dressers and practitioners, as well as to the nurses for whom it was written.

Two sanitary inspectors, Mr. H. HILL and Mr. E. DODSWORTH, have collaborated in preparing a handbook for public health students entitled *Food Inspection Notes* (H. K. Lewis and Co.; 6s.). It is designed as a brief guide to present-day knowledge of the subject, stripped of all superfluous matter, and within its limitations should prove useful for revision before the candidate takes his examination. The legal aspects of the matter are not touched on.

Preparations and Appliances

PLASTICS IN SPLINT-MAKING

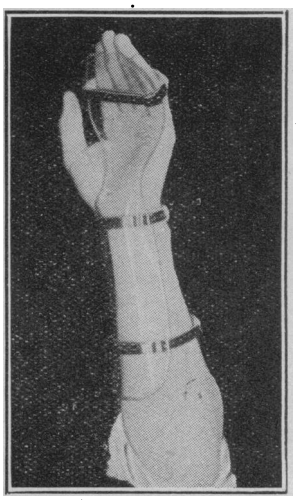
Mr. JAMES P. CAMPBELL, M.B., F.R.C.S.Ed., deputy surgeon-in-charge, Harlow Wood Orthopaedic Hospital, near Mansfield, Notts, writes:

Splint-making is a craft which is as old as the medical profession itself and is one which has a wide appeal, as it affects the work of the general practitioner and specialist alike; none more so than the orthopaedic surgeon, for whom it is an integral part of his daily work. The use of any new material in splint-making is therefore bound to arouse interest even though it is still in the experimental stage. A final statement as to its durability cannot be made until it has been put to the test of time. Plastics in one or other of their many forms may prove a valuable addition to those materials already in use in splint-making.

Any material which is light in weight, is easily moulded, and which retains its shape when fashioned is worthy of a trial in the manufacture of splints. "Perspex" (methyl methacrylate)—one of the group of plastics—is such a substance which has the added advantages of being non-absorbent, practically non-inflammable, and (so far as we know) non-irritant to the skin. It is as transparent as glass and casts no shadow, nor is there any distortion to *x* rays. In addition, it is tasteless and odourless and resists both acids and alkalis.

Perspex is supplied in sheets of varying size, and the samples under trial were 3/16 in. in thickness, but other thicknesses can be obtained. It can be cut and drilled when cold, but it is important to remember that bending and moulding can only be performed when it is in the plastic state, and this requires a temperature approximating that of boiling water. If attempts are made to bend it at too low a temperature it will crack, and cracks cannot be repaired, as one might imagine, by heating to the plastic state.

General Principles.—Perspex can be cut in simple shapes with a hack-saw, but curves are more easily cut with a fine-bladed fretsaw, and a little water will be found helpful when the saw is being used. Holes can be drilled with an ordinary drill such as that used in wood-work and metal-work. The edges can be rounded off with a file and if necessary smoothed with glass-paper or emery cloth. Moulding requires preliminary heating either in boiling water for two minutes or in front of a fire until the material becomes malleable. It can then be readily moulded to the desired shape, which must be retained until it is cool, and this may be hastened by immersion in cold water. Further adjustments in shape can be made by re-heating. Simple curves can be moulded by hand, but the more complex forms require a cast similar to those used in making block-leather splints. Two pieces of perspex may be cemented together with diakon cement, which is perspex in liquid form. The edges must be clean and fit closely; the cement is brushed on one half and the other quickly applied; light pressure is maintained for 12 hours in a warm temperature to allow the cement to set. The splint may be polished with special polishes—No. 1 and No. 2—to remove minor scratches and to give a finish to it.



Method of Splint Construction.—In making a splint from perspex the pattern in paper is first drawn on the paper-covered perspex and then cut out with a fretsaw. The edges are rounded off with a file and glass-paper. The perspex is then heated evenly throughout its length over a stove until it is soft and plastic. It is then bandaged to a cast and immersed in cold water for 1/2 to 1 minute. This process is repeated until the desired shape is obtained. Small drill-holes are then made at the appropriate levels for the straps to retain the splint in position. Before finally fixing the buckles and straps the splint is polished.

Splints made from perspex have certain advantages over metal and leather splints. They are lighter and less conspicuous; they are more hygienic in that they can be removed and washed with soap and water; they require less labour in manufacture as the finishing is more simple and padding or lining is unnecessary. The material can be used over and over again by simply heating and remoulding.

Perhaps its most useful field will be in cases of anterior poliomyelitis, as the lightness of the splint is of great importance in this condition, particularly in childhood, and perspex fulfils this need. This also applies to some types of nerve injuries such as wrist-drop of radial nerve paralysis. A further group of cases in which perspex splints may have definite advantages is where soiling is liable to occur. This applies to corrective splints for the lower limbs in infants and young children in the treatment of the deformities of rickets and where splints are required in incontinent patients.

The cost of splints made from perspex, so far as this can be estimated, may well be less than that for similar splints in metal, as the material costs almost the same and time in finishing a perspex splint is much less than that required to line and finish a metal splint.

B. Whitehall (*Johns Hopk. Hosp. Bull.*, 1943, **73**, 265) records a case of severe cerebral malaria due to *Plasmodium falciparum* in a soldier aged 25. Recovery followed the use of quinine intravenously. The urine and blood-pressure findings agreed with those of acute glomerular nephritis.

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