NOMOGRAMS FOR SLING AND ASSMANN PSYCHROMETERS

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In an annotation in the *Journal* (1948, 1, 989) it was suggested that nomograms for use with the Assmann and the sling or whirling psychrometers might be welcomed, as these are the instruments of choice for the measurement of the hygrometric properties of the atmosphere with scientific accuracy. The accompanying nomograms have been designed accordingly.

FIG. 1.—Nomogram for finding the relative humidity of the air from the dry-bulb and wet-bulb readings of a ventilated psychrometer

FIG. 2.—Nomogram for finding the drying capacity or saturation deficiency of the air from the dry-bulb and wet-bulb readings of a ventilated psychrometer.

To use the nomograms a stretched thread or a transparent ruler is placed so as to lie on the readings of the dry-bulb and wet-bulb thermometers; the relative humidity and the saturation deficiency can then be read off the appropriate scales.

The depression of the wet-bulb temperature below the dry-bulb temperature is sensitive to the speed of the air passing over the wet bulb for speeds up to five miles per hour, but is practically the same for all speeds beyond this (Meteorological Office, 1940). Bell and Weir (1947) have produced nomograms suitable for use in calm conditions. Ventilating psychrometers such as the Assmann and the sling psychrometer are so arranged that an air speed past the wet bulb of over five m.p.h. is obtained artificially, and so, being independent of the natural air speed, these instruments give the most reliable results.

The hygrometric properties of the atmosphere are of importance in body-temperature regulation, especially under conditions of stress such as exist in the Tropics, in deep mines, and in operating theatres (Wynne, 1947). They are also of special interest to heating and ventilating engineers and to the textile industry.

REFERENCES

- Bell, G. H., and Weir, J. B. de V. (1947). *British Medical Journal*, 2, 174.
 Meteorological Office (1940). Hygrometric tables. H.M. Stationery Office, London.
 Wynne, R. L. (1947). *British Medical Journal*, 1, 528.

[EDITOR'S NOTE.—It has been found impracticable to publish the nomograms here in a size that would make them really useful. They have therefore been separately printed full scale on art paper for those who are interested. Copies may be obtained from the Publishing Manager on application.]

Medical Memoranda

Ligation of the Mandibular (Inferior Dental) Artery

In deep operations on the face and the jaws preliminary ligation of the external carotid artery is not always entirely satisfactory in attaining its objective—that is to say, it does not give one a bloodless field and does not prevent venous and post-operative bleeding from innumerable oozing points; nor does it prevent the formation of a deep haematoma in a closed wound. Admittedly it controls from 50 to 75% of the bleeding, but even a remaining 25% is apt to be not only a great nuisance but a source of danger if it continues post-operatively into the mouth. Particularly is this so in the removal of sections of the mandible involving the ascending ramus.

CASE REPORT

I was faced with this problem recently in a young female patient. X-ray examinations of her lower jaw showed a ragged, eroded cavity in the centre of the bone extending well up into the ascending ramus above the point of entry of the mandibular artery. The bone was distended but there was no surface lesion. It looked malignant, and was getting larger fairly rapidly. (A subsequent pathological report stated that it was a malignant adamantinoma, which is what the clinical evidence and x-ray examination had led us to believe.)

To have obtained good access through the usual curved external incision would have involved an almost certain facial paralysis and a blind groping for the mandibular artery and vein, with a considerable probability of being unable to secure them. It was determined, therefore, to do the major part of the operation from within the mouth, and if possible to ligate the mandibular artery before it entered the lower jaw. I had reason to believe from war experience that this would not only be quite feasible but not too difficult. Search, however, failed to find any record of this ligation having been performed previously. Presumably its short course of an inch (2.5 cm.) or less from the internal maxillary artery to the foramen in the lower jaw has been regarded as inaccessible.

Operative Technique.—Operation was performed on Feb. 25, 1948, under full morphine and hyoscine premedication (Corlette system) and local analgesia (procaine and adrenaline), as follows:

1. Vertical incisions were made in the centre lines of the upper and lower lips to increase the retractability of the angle of the mouth and cheek. This procedure improves visibility and access very considerably and, anatomically and cosmetically, is preferable to a horizontal incision at the angle of the mouth.