health and mortality. Flooding is one example of a distressing event in a person's life, bereavement is another, and both of these have proved amenable to study. But there are many others that are seen in the course of clinical practice. Knowledge of such factors can be of direct value to the clinician: it makes possible a fuller understanding of the patient and a more realistic planning of treatment and estimate of prognosis.

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An extended version of this survey with fuller details of method and results is available on request.

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NEW APPLIANCES

Improved Semilogarithmic Haematological Chart

Dr. A. S. D. SPIERS and Dr. D. A. G. GALTON, Medical Research Council Leukaemia Unit, Royal Postgraduate Medical School, London W.12, write: The management of patients with leukaemia is facilitated by serial recording of haematological values and therapeutic manoeuvres on special charts (Galton, 1962). The technique is also useful in therapy of malignant lymphomas, haemolytic anaemias, and other disorders where treatment with toxic drugs is monitored by haematological values. Apart from their usefulness in the control of therapy, the charts serve as a concise summary of the case history, a means of comparing patients with the same disorder, and a valuable aid to teaching. The usual form of chart has a linear horizontal time-scale, with 10 days to 1 cm., and a logarithmic vertical axis for recording white cell and platelet counts. Haemoglobin values are recorded on a vertical linear scale in the upper part of the chart. Besides summarizing past treatment and progress, the chart allows some prediction of future events. For example, during busulphan therapy the trend of the white cell count can be extrapolated with some accuracy about 14 days ahead, and the safety of therapy is thereby increased, as necessary dosage modifications can be anticipated.

Haematological charts of this type have been in regular clinical use in many hospitals for a number of years, and their usefulness in the treatment of leukaemia is comparable to the value of the temperature chart in the management of infections. The space available on the earlier charts, however, is insufficient for recording the complex regimens of treatment now used for acute leukaemia, Hodgkin's disease, and other forms of malignant disease in which four or more drugs may be used simultaneously. Details of immunotherapy, platelet transfusion, intrathecal therapy, and other manoeuvres cannot be clearly entered on these charts. Furthermore, the time scale is often too contracted to illustrate rapid alterations in the blood count. At the same time the advent of new rapidly acting and potent therapies has greatly increased the need for accurate monitoring of treatment. The present modified chart satisfies these new needs.

THE CHART

The chart is printed on white card measuring 35.5 by 24 cm. (see Fig.). Owing to its size, which is dictated by the requirements of illustration, the chart must be folded if it is to be filed in conventional hospital case notes. On the other hand, it

fits easily into standard hanging files or foolscap-size box files. The scales and legends are printed in light orange. Details of the patient recorded at the top of the chart include the blood group and hospital case number, and space is provided for a special unit or laboratory number. The patient's age is recorded in relation to the year—for example, 32/70; this obviates the need for alteration with the passage of time.

The body of the chart is divided into three parts.

(1) An area 8 by 24 cm. for recording transfusions, drug therapy, and other important details, the nature of which will vary with the disease concerned. For example, the composition of bone-marrow aspirates or plasma proteins can be shown as histograms, and physical findings may be recorded at intervals by small sketches.

(2) A haemoglobin scale, 0 to 16 g./100 ml., occupies a further 8 cm. Changes in haemoglobin concentration of 0.2 g./100 ml. are shown as a deviation of 1 mm. By choosing a suitable scales determination, such as reticulocyte count or erythrocyte sedimentation rate can also be entered in this part of the chart.

(3) The lower 16 cm. is occupied by four cycles of a logarithmic scale (1×10^2 to 1×10^6). This will accommodate almost all white blood cell and platelet counts likely to be met with. With suitable colour-coding and by using fine-line ballpoint pens the platelet count, total white cell count, neutrophil count, and blast cell count

We thank Professor J. V. Dacie for his interest in the development of these charts.

Galton, D. A. G. (1962). In *Proceedings of the 8th International Congress of Haematology*, p. 467. Tokyo. Pan-Pacific Press.

Two views of a dental instrument, likely a scaler or explorer, showing the handle and the working end. The instrument has a long, dark, textured handle and a metal head with a small, rounded tip. The top view shows the instrument from a side angle, while the bottom view shows it from a more direct side angle, highlighting the curved shape of the head.

Tinckler, L. F. (1965), *British Medical Journal*,
2, 165.