other techniques were clearly positive. Even when the reaction was positive, it was not well localised in the cell cytoplasm. Therefore this reagent is of no value in studies of blood and bone-marrow samples.

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Letters to the Editor

Use of low ionic strength salt solution in compatibility testing

There have recently been several publications, starting with that of Löw and Messeter (1974), concerning the use of low ionic strength salt solution (LISS) in antibody identification procedures and when cross-matching (Wicker and Wallas, 1976; Lincoln and Dodd, 1978). Other authors are mentioned in the text below.

In November 1977, we published in our regional booklet 'Technical Notes on Blood Transfusion' details of our own LISS methods and, prompted by the recent publication by Ross and Ducie (1978), we should like briefly to record our findings.

The standard methods of cross-matching that we recommend to hospital blood banks in our region are those described by Tovey and Jenkins (1967) in the ACP Broadsheet 57. To evaluate the use of LISS in rapid compatibility tests against these standard methods we have examined 100 antibodies of different specificities, as shown in Table 1. The LISS solution used was that described by Moore and Mollison (1976), sterilised and stored at 4°C.

The techniques used were LISS indirect antiglobulin tests with 5-minute, 10-minute, 15-minute, and 20-minute incubation times and an indirect antiglobulin test using physiological (0·14M) saline incubating for 60 minutes. All tests were performed by the slide technique. The results are expressed in Table 2 as the percentage of antibodies giving reactions by LISS antiglobulin tests which are (A) better than, (B) equal to, or (C) not as good as the conventional test. Seven sera did not react as well by the LISS antiglobulin test, using a 10-minute incubation time, as by the conventional antiglobulin test. These sera contained anti-Kell antibodies (3), anti-Fy^a(2), anti-D, and anti-Le^b. In all seven cases the reactions were only marginally weaker by the 10-minute LISS antiglobulin test.

The benefits obtained in increasing the incubation time from 5 to 10 minutes can be clearly seen from the table. Furthermore, two weak anti-Kell sera did not re-

Table 1 *Number and specificities of antibodies examined*

Anti-D	16	Anti-K	17	Anti-Jk^a	5
Anti-C	3	Anti-k	2		
Anti-E	13	Anti-Kp^a	2	Anti-Wr^a	1
Anti-c̄	7			Anti-Bg^a	1
Anti-ē	3	Anti-Le^a	5	Anti-Kn^a	1
		Anti-Le^b	4	Anti-Lan	1
Anti-S	6			Anti-Vel	1
Anti-s̄	2	Anti-Fy^a	8	Anti-Gy^a	2

Table 2 *Effect of incubation times on performance of antibodies by the LISS antiglobulin test*

Order of reaction compared with conventional antiglobulin test	*LISS antiglobulin test incubation*			
	5 min	*10 min*	*15 min*	*20 min*
Percentage				
A better than	18	28	31	37
B equal to	58	65	66	60
C not as good as	24	7	3	3

act by LISS antiglobulin test when only 5 minutes' incubation was given.

All antibodies used in the investigation had been stored for varying lengths of time; they had been detected initially using a conventional antiglobulin test. Five weak antibodies had deteriorated on storage to such an extent that they were no longer detectable by the conventional antiglobulin test. However, these antibodies were still detected by LISS antiglobulin test even after only 5 minutes' incubation. These five antibodies were of various specificities, comprising one example each of anti-E, anti-S, anti-$\bar{s}$, anti-Le^b, and anti-Jk^a.

An LISS albumin displacement test (the details of which are given below) was also assessed using the antibodies listed in Table 3.

Table 3 *Number and specificities of antibodies examined by LISS albumin displacement technique*

Anti-D	15	Anti-S	5
Anti-C	2	Anti-$\bar{s}$	1
Anti-E	9	Anti-K	15
Anti-$\bar{c}$	5	Anti-k	2
Anti-$\bar{e}$	2	Anti-Le^a	5

Two anti-E sera and an anti-S serum gave results by this technique only marginally weaker than a conventional albumin displacement test. Otherwise the results obtained were at least as good as the conventional albumin displacement test, and the total incubation time was only 25 minutes.

From a consideration of the results it was decided that the following techniques would form the serological basis of a good emergency cross-matching procedure.

LISS antiglobulin test: 2 vol of serum are incubated with 2 vol of a 5% LISS suspension of red cells for 10 minutes at 37°C in a waterbath. Thereafter proceed as in a conventional indirect antiglobulin test.

LISS albumin displacement test: 1 vol of serum is incubated with 1 vol of a 5% LISS suspension of red cells for 10 minutes at 37°C in a waterbath. Using a bench-top centrifuge, spin at 1000 rpm for one minute. Add 1 vol of 20% bovine albumin and reincubate at 37°C for 15 minutes.

In conclusion, from our findings we suggest that the minimum incubation time should be 10 minutes using a waterbath rather than an air incubator. We have found the method to be sensitive and suitable for rapid cross-matching of blood in urgent clinical situations.

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Broadsheet No. 89

The recent Broadsheet No. 89 (Handling and clinical use of blood products) contained the statement that the Plasma Fractionation Laboratory, Oxford, produces Prothrombin Complex Type C. The production of this fraction was discontinued in October 1975.

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Book reviews

Laboratory and Research Methods in Biology and Medicine. Volume 1. 'Practical Enzymology of the Sphingolipidoses'. Edited by R. H. Glew and S. P. Peters. (Pp. 321; illustrated; $34.) New York: Alan R. Liss, Inc. 1978.

This is the first volume of *Laboratory and Research Methods in Biology and Medicine*, and, if future volumes are of the same standard, they will make a significant contribution to medical science. It contains 10 sections: the first is concerned with the general principles and techniques of case identification, carrier testing, and prenatal diagnosis, and the others are devoted to individual clinical conditions such as Niemann-Pick disease, metachromatic leukodystrophy, and Fabry disease, for example. The contents of the sections are wide-ranging and concerned with clinical and pathological descriptions, the enzyme defects, the enzyme assays, the properties of substrates used in assays, recommendations concerning diagnosis and much practical information on the biochemistry.

This will be a very useful volume not only for those who work in the laboratory but as a reference book for the practising neurologist. It fulfills a definite need and is recommended. B. E. CLAYTON

Major Problems in Clinical Pediatrics, vol. XVII. 'Viral Disease of the Fetus and Newborn.' By J. B. Hanshaw and J. A. Dudgeon with a foreword by A. J. Schaffer. (Pp. xvi + 356; illustrated; hardback £14.) Philadelphia, London, Toronto: W. B. Saunders. 1978.

This monograph is the most recent of a very excellent series, which has proved useful to workers in all branches of paediatrics including neonatal paediatrics. This new addition maintains the same high standard. It is very readable and at the same time is scientifically sound with up-to-date bibliographies at the end of each of the 15 chapters.

The more important viral infections likely to affect the fetus and newborn are dealt with in detail, and there are also chapters on differential diagnosis, laboratory diagnosis, and prevention, treatment, and chemotherapy. Additional contributions on pathology of the placenta and cord (W. A. Blanc) and development of