The microscopical section (*vide infra*) shows a simple villous papilloma (Fig. 2).

As to the diagnosis, papilloma of the renal pelvis is so extremely rare that it is not surprising there was considerable difficulty in correctly diagnosing this case. The first

FIG. 1.

of us who saw the case suggested stone in the left kidney, then stone in the right kidney, then he thought a stone had ruptured the kidney, and when hæmorrhage developed he still clung to the diagnosis of a calculus which had ruptured the kidney and penetrated the diaphragm. His colleague considered that it was a calculus but thought the hæmorrhage was due to traumatism not necessarily affecting the kidney. Finally, the operation discovered a tumour which we thought might be malignant but which the microscope showed to be benign papilloma. Anyone who reads this case will agree that there was a considerable amount of evidence in favour of every one of the above diagnoses.

The actual history of passing calculi obscured the real cause of the hæmaturia but the point we have emphasised—viz., passage of blood during rest in bed—was hardly like hæmaturia from calculus and should have suggested the correct solution. When the hæmorrhage developed we questioned whether tubercle or malignant growth was the cause of this, but the appearance of the patient was against either, though his family history suggested both. His mother had died from carcinoma of the kidney, two brothers from pulmonary tuberculosis, and a sister from tuberculous meningitis, and with very few exceptions all his relatives who did not die from tubercle died from cancer.

S. Paget, in his "Surgery of the Chest," p. 198, says: "A hæmorrhagic effusion into the pleura is almost certainly a sign either of tubercular or malignant disease of the lung or pleura at whatever age it occurs"; and p. 199: "A hæmorrhagic effusion may occur in cases of abdominal tumour and is almost certain proof that the abdominal disease is malignant and has invaded the diaphragm."

Osler,¹ in addition to tuberculous and cancerous pleurisy, states: "Occasionally hæmorrhagic exudation into the pleura is met with in perfectly healthy individuals." He also mentions Bright's disease, malignant fevers, and cirrhosis of the liver as causes. Hæmorrhage and hæmaturia have been reported in combination by Oliver,² but we are unable to find any case of hæmonephrosis which perforated into the pleura; in Bright's case there was a fistulous opening into the colon.

We have visited or made inquiries at the museums of all the medical schools in London and from these sources and the literature on the subject we have collected some 49 cases of villous tumours of the renal pelvis. The works of Henry Morris, H. Fenwick, Albarran, and Imbert have supplied the majority of them, but they have not been collected together in English literature so far as we can ascertain. The subjoined list speaks for itself; particularly it emphasises the rarity of these tumours in the female. It will also be seen that the diagnosis of these cases presented difficulties even to the leading surgeons and physicians of the day. Mr. Fenwick's patient had been under many well-known surgeons and physicians who diagnosed oxalate of lime stones in one or other kidney, growth of kidney, villous growth of the bladder, and

FIG. 2.

so on. One surgeon cut down on his right kidney but declined to open it. The patient then for two years went the round of the profession in London and Edinburgh till Mr. Fenwick removed his kidney and cured his hæmaturia. In the case described by Heaton and Gamgee the patient was in various hospitals in Birmingham and under the most careful observation, but it took nine and a half years and five major operations, to say nothing of cystoscopy, before the diagnosis and cure were completed. Our patient certainly presented unique complications and baffled exact diagnosis but his treatment has been correct and now that more than 12 months have elapsed since his operation we can say that he has recovered and that there is a fair hope that he is cured.

Bedford.

ETHYL CHLORIDE AS AN ANÆSTHETIC IN GENERAL PRACTICE.¹

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HAVING often been asked by general practitioners my opinion of the suitability of ethyl chloride as a general anæsthetic I think a few remarks on this subject may not be devoid of interest. There may be but little new to say and you may feel that what I do tell you is in the nature of a "back number." You are all doubtless as familiar with what has been written upon this subject as I am and I shall therefore have to rely on my own practical

¹ Osler: Principles and Practice of Medicine, p. 674.

² Brit. Med. Jour., March, 1892, p. 647.

¹ A paper read at a meeting of the Winchester Division of the British Medical Association on Nov. 25th, 1904.

experience of ethyl chloride. This experience is considerable, for since the summer of 1903 I have used it constantly at the London Hospital in a large number of cases at the Royal Dental Hospital, and also in private practice. I have given it to every variety of case and in every variety of way, to old men and maidens, young men and children, infants, and aged women. I have given it alone and with air, with nitrous oxide, with chloroform, with ether, and with A.C.E. mixture, and as a preliminary to each of the last three for a large variety of surgical operations.

As my remarks will be of an essentially practical nature I will not enlarge upon the history of the drug; ethyl chloride is not new, indeed it is quite old, at any rate old enough to have been practically forgotten until Dr. W. J. McCardie of Birmingham nearly four years ago reminded us of its anæsthetic properties and showed us how, with the purest ethyl chloride procurable, it might in skilled hands be a most valuable addition to our armamentarium; since then Dr. McCardie has done most valuable work on the subject, work which has already become classical and work for which all anæsthetists and, I think I may say, the public too, owe him a debt of gratitude. The history, then, of ethyl chloride we may almost ignore, for as busy practitioners we have little time to devote to the study of ancient history, but the history in this case has one important practical point for us—viz., it impresses upon us the fact that even in skilled hands death under ethyl chloride has occurred suddenly and unexpectedly. I make this point because with much familiarity one becomes so charmed with the action of ethyl chloride as an anæsthetic that one may easily underestimate its lethal power.

Ethyl chloride (C_2H_5Cl) is a colourless, very mobile liquid, is very volatile, boiling at $12.5^\circ C.$ or $55^\circ F.$ It has a pleasant smell and on inhaling a breath or two a pleasant feeling of exhilaration is experienced.

What are the capabilities of ethyl chloride in general practice? Before deciding this point we must learn what the requirements of the general practitioner are for an anæsthetic, and I hope further light will be thrown on the point in the discussion. I suppose I may take it that to satisfy him the agent must be portable, of stable composition, safe, easy of administration, not requiring elaborate preparation beforehand, rapidly acting, and providing if necessary a narcosis of several minutes after removal of the inhaler—a narcosis which shall be quiet and sleeplike and which shall not necessitate close watching after a safe dose has been administered; an agent giving an anæsthesia which shall not be followed by dangerous or unpleasant after-effects. Ethyl chloride fulfils most of these conditions, provided it is administered with care and discrimination and provided that the administrator is a keen observer and quick to notice the finest shades of difference in a patient's condition. Ethyl chloride is certainly portable. I have here a bottle containing enough to anæsthetise 12 ordinary cases which is but seven inches high and one and a half inches in diameter. Its composition, if properly stoppered and kept cool and in the dark, is practically stable; I am now using some ethyl chloride I bought several months ago. It is relatively safe; that is, there have been few recorded deaths in many thousand administrations, but its action is so extraordinarily rapid, startlingly rapid in some cases, that unless it were administered with the greatest caution in those cases it would be most easy to give an overdose.

It may be well to quote here a case which occurred to me a few months ago, and which was most instructive to me—a case which has inspired me with the greatest awe for the power of ethyl chloride. The patient was a youth, aged 18 years. The operation was for the radical cure of hernia. He seemed rather frail but otherwise he was normal in every respect. I decided to demonstrate to my clinical clerks the induction of ether anæsthesia preceded by ethyl chloride. The usual precautions were taken and after mentioning the great rapidity with which the drug acts I sprayed five cubic centimetres into the inhaler and began the administration. The boy took only a few breaths when he began to struggle, but owing to the short lapse of time since I had applied the face-piece these struggles were considered voluntary, that in fact the patient was objecting to the taste and smell of the anæsthetic, and as the eyelids were tightly closed I held on; but a moment later the struggles became more clonic and opisthotonos developed—to one of experience there was no mistaking this sign. The inhaler was at once removed and the pupils were examined. I never saw pupils more dilated, the

corneal reflex was absent and the iris did not respond to the stimulus of light. Had I not been a witness of this case I would not have believed that any drug could possibly act so rapidly—the whole thing occurred inside 20 seconds I am sure, and the experience has been one of my most valuable. Before leaving this case I may say a word about the early condition of the lids; they were tightly closed, and as every anæsthetist knows the tonicity of the eyelids is a valuable index of the condition of the other ocular reflexes—that is to say, if there be a good “tone” in the lid muscle one may take it that the other reflexes are present, but if the lids be flaccid it is probable that the other less delicate reflexes are abolished also. Taking into account this contraction of the lids (they did not “give” to the finger) with the short time since the inhaler was applied the true condition, viz., that the orbicularis palpebrarum was involved in the general muscular convulsion, was mistaken for unabridged lid reflex. One, of course, never judges from one piece of evidence only, and in this case I reviewed the evidence of (1) the time during which the administration had lasted and the dose given; (2) the condition of the eyelids; (3) the respiration (it was not, as is usual, characteristic of the condition of the patient); and (4) the evidence of my past experience. The result shows that even with so much evidence a judgment may be unjust and impresses on us the point that we must, in administering anæsthetics, never rely on one piece of evidence only, but take for our guide the patient's whole condition in its several factors and not the condition of only one reflex or other sign. This case was so unusual that had I been a novice in the administration of anæsthetics I fear I should have lost him. But this is digression.

One full dose of ethyl chloride provides an available anæsthesia of at least two minutes, an anæsthesia which if complete muscular flaccidity is not required is, I think, ideal, and after which unpleasant occurrences are not common if proper precautions are taken. But if, on the other hand, complete muscular flaccidity is required the anæsthetic must be pushed to the limit of safety, and although one gets a longer anæsthesia bad after-effects are more likely to follow. I have said so much in favour of ethyl chloride that a wrong impression will be created unless I now point out its limitations; they are, that it is unsuitable for long operations because not only does it produce anæsthesia rapidly but it is also very rapidly eliminated, consequently it is very difficult to maintain a proper even depth of anæsthesia and unless this is attained an undue strain is thrown upon the automatic vital centres. If it were used for long operations the cost would be considerable, and it would require the undivided attention of a skilled and expert administrator so that, at any rate, one man could not administer the anæsthetic and operate at the same time, which is often necessary in general practice in the country. Not only this, but the after-effects vary in direct proportion to the length of the administration, and after large doses faintness or more serious cardiac depression are likely to be met with.

We now come to the administration itself and I will tell you what I find is the best practice.

1. *The inhaler.*—So many new inhalers have recently been placed upon the market, each claiming to be the best, that it is difficult for the uninitiated to decide on which to purchase. After using a variety of inhalers I recommend above all others Carter Braine's modification of Ormsby's inhaler, which I will now show you. My reasons are that if you give ether at all it is probably this inhaler you already have—if not I think it ought to be. One does not want to multiply one's apparatus any more than can be avoided and with the inhaler referred to any anæsthetic could be given. The intrinsic advantages of the inhaler are that its air way is so wide that there is absolutely no obstruction to respiration if you insert your sponge properly—and a great deal is involved in this. The following points are worth remembering: (1) character of sponge: it should be of the honeycomb variety; (2) it should be unbleached, because when wet it does not lose its rigidity or elasticity—it is true that the bleached sponges look prettier but directly they are wetted with anæsthetic fluids they collapse and there is great difficulty in breathing through them; (3) it should be cut so that the channels run parallel with the long axis of the inhaler and the patient then respire through a series of tubes bathed in the anæsthetic fluid; (4) it should not fit the inhaler tightly

so as to compress its channels; (5) it should be well wrung out in warm water before use so that all its cells fully expand; and (6) it should be so placed in the inhaler that all the foregoing points have full play. Some have objected that if one uses the Ormsby one "crowds on" the anæsthetic too much, but please note that I have not suggested that one should put the full dose *on the sponge* and clap the inhaler on the face suddenly; this would, of course, be bad practice and those who raise such an objection are lacking in imagination and show a want of resource in the use of apparatus. The proper way to use ethyl chloride in an Ormsby is to apply the anæsthetic not *on the sponge* but *beyond it*; in this way the vapour is screened from the face by the sponge and does not come over too suddenly, it does not freeze solid as is usually the case if merely sprayed on the surface of the sponge where it evaporates very quickly. Then do not *clap* on the inhaler but apply it gently to the bridge of the patient's nose at an angle away from the face and with the air valve open, then gradually shorten this angle and when the inhaler properly fits gradually close the air valve. The face-piece meanwhile should be supported and closely applied by the aid of the little finger of the hand holding it being placed under the chin. Experience will soon teach you how rapidly these manipulations may be carried out; suffice it to say that one can so anæsthetise a child that it will neither hold its breath, cough, nor struggle from beginning to end of the administration and yet one will not have lost by evaporation so much of the anæsthetic as to require a second dose. Of course, if the drug is too suddenly applied any patient may cough or struggle, the struggles being usually struggles for air and not mere struggles from excitement as many students seem to think, for the breath is taken away by the pungency of too strong a vapour.

2. *Preparation of the patient.*—This naturally need not be as elaborate for an operation in minor surgery as for one in major surgery, but do not be misled by statements to the effect that *no* preparation is required; merchants of ethyl chloride or its mixtures, particularly the latter, attempt to make capital in this way; if the stomach, bladder, or bowels be full at the time of the administration they are very likely to empty themselves reflexly either during or immediately after the administration.

3. *Posture.*—Almost any posture is safe, so far as the anæsthetic is concerned, but remember that small children are best anæsthetised in the recumbent position—they are apt to collapse into a heap in the chair if the administration is conducted therein. Also remember that children prefer to sit while being anæsthetised—they are less frightened than if laid down; one can always let them sit for the first few breaths and as soon as the higher consciousness is lost lay them down. Remember, moreover, that the pain of fear is worse than any physical pain and that the less a patient is, from youth, amenable to reason the more is he susceptible to fear, therefore deal tenderly with the little ones. But if you do place a patient in a chair place him so that there is no obstruction to respiration and no fear of the respiration becoming obstructed during the administration; that is, he should be made to sit erect with the head erect on the spine, so that the floor of the mouth is horizontal, for if the head be thrown back, in the favourite position with dentists and barbers, the neck muscles are put on the stretch and the trachea becomes pressed upon in consequence and there is a risk of the respiration becoming obstructed. Not only this but any saliva, blood, or other fluids gravitate backwards and are either swallowed or inhaled, in the former case giving rise to subsequent vomiting and in the latter to laryngeal spasm. If, on the other hand, the head be tilted forwards the chin is apt to press unduly upon the trachea and cause respiratory embarrassment in this way; in either case serious cyanosis, &c., will result and with the head thrown back "false stertor" is heard early in the anæsthesia, before the patient is fully anæsthetised, which may lead you to misjudge the depth of anæsthesia and stop the administration too soon.

4. *Dose.*—This depends upon what operative procedure you wish to do and upon the weight and fitness of your patient. Always dose according to weight—I mean that a big, heavy person will require more, other things being equal, than a small thin one; allow more for alcoholics and smokers and those who are intemperate in anything and allow less for the anæmic or breathless person. A good average dose for an average adult is 5 cubic centimetres; but, of course, the dose will vary with the degree of dilution and if the face-piece does not fit accurately there will be considerable

admixture of air and he may require a further dose, or you may be unable to obtain a satisfactory anæsthesia at all. It is better to give a full dose and rapidly induce, allowing no admixture of air beyond that which is already in the inhaler, than to economise your drug and make up for smallness of dose by prolonged re-breathing.

5. *After-effects.*—These vary in direct ratio to the amount of re-breathing to and fro allowed; also on the amount of previous preparation and to some extent the dose—after large doses or prolonged administration during which much re-breathing has been allowed shock and faintness are likely to be met with. Another important point is the after-treatment; for instance, if a patient be moved too soon he is more likely to suffer from vomiting and headache, but if he be allowed to remain in the recumbent posture for a quarter of an hour or more after the administration he is less likely to have after-effects. My average at hospital among all classes of patients is that about 3 in 12 have after-effects; many of these, however, come to hospital soon after a meal and otherwise unprepared. In private practice vomiting is quite uncommon.

6. *Clinical signs.*—Provided that the administration is conducted in the way I have described—that is to say, that no outside air is admitted to the inhaler after the air valve has been closed—the following signs are observed: 1. Breathing deepens and becomes more rapid—this alteration in the character of the breathing affords a most valuable guide as to the degree of anæsthesia attained and results, I think, not so much from the action of the ethyl chloride *per se* as to the restriction of oxygen, the oxygen originally in the inhaler being soon used up, with consequent stimulation of the respiratory centre. 2. A little later one feels by the finger under the patient's chin some vibratory movements of the larynx and a moment later still these vibrations become more and more audible, until (3) the characteristic laryngeal stertor is observed. At this point the administration should be stopped—i.e., if the stertor be *true* tracheal stertor and not due to faulty posture causing obstructive or "false" stertor. 4. About the same time that the breathing deepens the patient's colour improves and the face becomes suffused and he looks a pretty, healthy, pink colour. There is some controversy as to whether the blood pressure is raised or depressed during the induction of anæsthesia. I incline to a middle opinion—viz., that at first, owing to the increased force and frequency of the pulse which is observed in nearly all cases, the pressure tends to rise but almost at the same time there is some vaso-motor paralysis in the cutaneous vessels; these accordingly dilate to a considerable extent and thus the pressure is equalised or even tends later in the course of the administration to fall. But this dilatation which causes the suffusion of the face also causes perspiration in many cases and in others, again, considerable bleeding from the wound, especially after the removal of adenoids and tonsils, particularly if the anæsthesia has been pushed and the vaso-motor paralysis thus increased. I do not think it matters much in actual practice whether the pressure rises or falls, for in the event of any accident happening one has no time to waste over examining the pulse. It has been established that ethyl chloride kills, not by paralysing the heart, but by paralysing the respiration, the chest becoming fixed in over-expansion; thus, in restoring a patient who has been over-dosed nitrite of amyl, for instance, would be useless. 5. About the same time, or a little earlier than that at which the first tracheal stertor has been noticed and a little later than that at which the face becomes suffused—usually from 40 to 50 seconds—the globes of the eyes become fixed, often after some preliminary nystagmus and usually in the position of convergent squint downwards. 6. A moment or two later the pupils dilate and if the anæsthetic be not now removed (7) the light and the corneal reflexes disappear the pupils becoming very dilated and fixed. If air be now admitted and the anæsthesia be lightened or continued in a lighter stage the pupils again contract, but I have seen in several cases, even after the corneal reflex has returned, the pupil remain wide and insensitive; I do not know how to account for this, any more than I can explain why in yet a few other cases the pupil does not dilate, even although the patient be deeply anæsthetised. These irregular cases only again impress upon us the necessity for considering all the points of available evidence before making up our minds as to a patient's condition. To repeat, although in about 90 per cent. of cases the signs of deep anæsthesia are stertor, fixity

of the globes, and dilated pupils with loss of ocular reflexes, yet these signs must not be taken as invariable and one must always be on the watch for unusual symptoms. As a rule there is but little salivation during induction, but often one meets with profuse secretion of saliva for no obvious reason—this is a point worth remembering in arranging the patient's position. It is never wise to push the anæsthetic in the case of fat subjects; they bear deprivation of oxygen badly and are more likely to suffer from shock; also their respiratory passages are as encroached upon by fat overgrowth on the inside as are the skin and cutaneous tissues, and the air ways are more likely to become occluded. Never administer ethyl chloride without first placing a wooden dental prop between the teeth—this not only keeps the air way free but is also a safeguard in case one may have to insert a Mason's gag to expedite means of resuscitation.

Some anæsthetists have stated that ethyl chloride is unsuitable for certain special operations—e.g., for breaking down joints and for setting fractures, &c.—because they say they cannot obtain complete muscular flaccidity, but I think that is merely a question of degree of anæsthesia and that if the anæsthetic be administered with a free admixture of air and is pushed to fixity of the globes, dilatation and fixity of the pupils, with loss of corneal reflex and with stertorous breathing, there will be complete muscular flaccidity in the vast majority of cases.

With regard to contra-indications, in the following conditions ethyl chloride should not be administered: diseases of the larynx; inflammatory lesions and tumours in, or adjacent to, the respiratory passages; goitre; all conditions giving rise to urgent dyspnoea; and in long operations. Time will not permit of my mentioning other points—e.g., treatment of dangerous symptoms, &c.; its use with other anæsthetics and for long and for special operations, especially tonsils and adenoids, except to remind you that in these last the risk is increased if the coughing reflex be abolished and that under ethyl chloride this occurs very rapidly.

Wilton-place, W.

ACUTE LYMPHOCYTHÆMIA.¹

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THE case which I bring before this society to-night is of great pathological interest and serves to illustrate some very important problems associated with this disease and also with severe anæmias in general. The history of the case is as follows. A man, aged 37 years, was admitted into St. Thomas's Hospital, under the care of Dr. H. G. Turney, on August 29th, 1904. The patient's father and mother were said to be suffering from syphilis at the time of his birth. There is nothing else of interest in either the family or past history. The present illness appears to date from the beginning of July of this year. The patient was having his holidays and he noticed that he was unable to go about and enjoy himself as he wished to do, because he was so easily fatigued. His friends noticed that he was becoming anæmic. In the early part of August he was compelled to take to his bed owing to increasing weakness and severe persistent headache. On August 27th he came to St. Thomas's Hospital for treatment as he wished to leave for South Africa as soon as it was possible.

On admission to the hospital the patient was found to be intensely anæmic and in a very weak condition. The state of his mouth was extremely bad. There were a large number of stumps in both the upper and lower jaws and a quantity of offensive pus oozed up from around the fangs. The gums showed a great tendency to bleed and were pale and spongy. Large and tender glands could be felt in the submaxillary triangle and around the lower jaw. On examination of the chest there was some evidence of emphysema, otherwise the

lungs were found to be normal. The heart was found to be normal to inspection, palpation, and percussion, but a soft systolic murmur could be heard at the apex and at the left base. The murmur was quite localised at both these situations. The radial pulse was 100, regular, and of fair tension. The vessel wall was thickened. The spleen was found to descend about one and a half inches below the left costal margin and this viscus also extended upwards for some distance above the normal limits. There was no friction rub heard. The spleen was of very firm consistence. There was a considerable increase of the area of liver dulness. The lower edge could be felt about the level of the umbilicus. The surface was smooth and the free edge was hard. There was nothing else abnormal in the abdomen. There was no evidence of ascites. There were no true glandular enlargements in the lymphatic system beyond what has already been referred to as a result of the septic condition of the patient's mouth. The nervous system did not present any abnormal features. The optic discs were found to be normal and there was nothing abnormal detected on examination of the retinae. The conjunctivæ were extremely pallid. There was no tenderness of any of the bones. There were no abnormal changes in the skin. The urine was acid and was of specific gravity 1025; no albumin or sugar was found.

Examination of the blood.—The red cells were counted by a modification of Gowers's method, and the leucocytes by the Strong-Seligmann method. The hæmoglobin was estimated by Solly's modification of Oliver's hæmoglobinometer. The blood films were stained by Leishman's method. The results of the examination of the blood, on three separate occasions, are given below in a tabulated form. It is impossible to over-estimate the importance of a complete examination of the blood in all blood diseases. It is frequently stated in the literature that the lymphocytes, for example, were 52 per cent. Such a record is of no value. A differential count of leucocytes and the total number of each variety of leucocyte in a cubic millimetre of blood should always be given, otherwise the results which are obtained are of no scientific value.

Table showing the Results of the Examination of the Blood on Three Separate Occasions.

—	First examina- tion, August 31st, 1904.	Second exami- nation, Sept. 7th, 1904.	Third examina- tion, Sept. 14th, 1904.
Erythrocytes ...	2,102,000 per c.mm.	1,665,000 per c.mm.	0,956,000 per c.mm.
Leucocytes ...	43,980 per c.mm.	73,200 per c.mm.	449,800 per c.mm.
Hæmoglobin ...	40·0 per cent.	25·0 per cent.	15·0 per cent.
Colour index ...	0·9	0·8	0·7 (nearly)
Approximate ratio between leucocytes and erythrocytes ...	1-48	1-23	1-2

Stained Blood.

—	Per cent.	Per 1000 cells.	Per cubic millimetre.	Per cent.	Per 500 cells.	Per cubic millimetre.	Per cent.	Per 500 cells.	Per cubic millimetre.
Polymorpho- nuclear neutro- philes ...	2·1	21	924	1·6	8	1,171	0·4	2	1,799
Small lympho- cytes ...	62·7	627	27,588	46·2	231	33,818	9·0	45	40,482
Large lympho- cytes ...	34·0	340	14,960	48·8	244	36,721	83·6	418	376,032
Large hyaline cells ...	0·4	4	176	3·0	15	2,196	6·8	34	30,586
Mast cells ...	0·0	0	0	0·0	0	0	0·0	0	0
Eosinophiles ...	0·8	8	352	0·4	2	292	0·2	1	879
Total mono- nuclear cells ...	97·1	971	42,724	98·0	490	71,735	99·4	497	447,100

Fresh blood and blood films were examined with the following results: On August 31st rouleaux formation (Hayem's method) was good. There was slight poikilocytosis present. A few microcytes but no macrocytes were

¹ An abstract of this paper was read before the Pathological Society of London on Nov. 1st. The diagrams which were shown so as to illustrate certain points in this paper will be reproduced in the Society's Transactions.