From Table II it is clear that in the 32nd (fertile) cycle fertilization occurred between the 9th and 16th days.

The foregoing conclusions depend upon the assumption that, throughout, the spermatozoa were capable of fertilizing. There was a long period of abstinence from regular sexual activity

TABLE III.—*Distribution of Acts of Uncontraceptive Intercourse shown on Days before the Onset of the Next Cycle*

Days before Next Cycle started	Total No. of Uncontraceptive Acts	
	Non-fertile Cycles 1-29, 31	Non-fertile Cycle 30
25	1	
24	0	
23	0	
22	3	
21	2	1
20	0	0
19	1	1
Assumed fertile period (narrower limits)	18	1
	17	1
	16	1
	15	0
	14	1
13	3	0
12	3	0
11	4	0
10	16	0
9	9	0
8	14	0
7	11	0
6	9	1
5	11	1
4	9	1
3	10	0
2	11	0
1	6	0
Menstruation begins		

between the onset of menstruation and the 20th day of each cycle. Both partners were young and healthy, and in a good state of nutritional well-being.

Summary

Data are given showing the variation of 52 menstrual cycles in the same individual, and the relation between an assumed fertile period and the beginning and end of each cycle.

Ovulation is assumed to occur 15 days before the onset of the following menses.

Records of uncontraceptive intercourse during 31 infertile cycles show that there were occasions when intercourse took place as much as 13 days before the beginning of the next cycle without ensuing pregnancy. Intercourse was most frequent up to 10 days before the next cycle without pregnancy resulting.

Intercourse which took place on the 9th, 10th, and 13th to 16th days after the beginning of a cycle was followed by pregnancy.

It is concluded that prediction of the narrower limits of the fertile period of an individual can only be made by counting back from the beginning of the next cycle.

Only the wider limits of the fertile period may be predicted by counting from the beginning of the same cycle, requiring a knowledge of the variation of menstrual periodicity.

REFERENCES

- Fleck, S., Snedeker, E. F., and Rock, J. (1940). *New Engl. J. Med.*, **223**, 1005 (cf. *British Medical Journal*, 1941, **2**, 23).
 Pryde, J. (1941). *British Medical Journal*, **1**, 12.
 Weinstock, F. (1934). *Zbl. Gynäk.*, **58**, 2947.

W. M. Fowler and Adelaide P. Barer (*J. Amer. med. Ass.*, 1942, **115**, 421), investigating the rate of regeneration of haemoglobin in blood donors, found that the average drop in blood haemoglobin was 2.3 g. after the removal of 555 c.cm. of blood, and that the average time needed to replace this amount of haemoglobin was 49.6 days. Longer recovery periods were associated with a steeper fall in haemoglobin and could not be correlated with initial blood haemoglobin values. Hb was regenerated in man at the rate of 0.049 g. per 100 c.cm. of blood a day, and in women at the rate of 0.040 g. The administration of 1 g. of iron and ammonium citrates a day increased the daily haemoglobin regeneration by 49% and shortened the recovery period from 49.6 to 35.2 days. This was noticed during the first period, but the effect after subsequent blood donations became progressively less. If the haemoglobin of the donor is not regularly estimated the authors consider that three months should be allowed between donations.

Medical Memoranda

Scabies in an Army Unit

It has been held that blankets and clothing play an important part in the spread of scabies in the Army. Mellanby (1941a), on the other hand, from recent experiments with volunteers and other considerations, believed that fomites are unimportant in the transmission of scabies, and that many cases are acquired on leave, from wife or child.

The following is an account of 39 cases seen in one unit during 7 months. Of these, 36 were carefully investigated in an attempt to find out how the disease was acquired. The number of cases is small, but the series is thought to be interesting in that the conditions in the unit remained unchanged during the period and the circumstances were such that men rarely slept out except when they returned home on privilege leave. Week-end leave did not complicate the picture.

THE INVESTIGATION

Our methods of control consisted of monthly skin inspections of the whole unit, inspection of each man when he returned from leave, and the immediate hospital treatment of each case when detected, together with disinfection of bedding and clothing. When a man reported sick with scabies he was questioned as to possible contact with other cases both within and outside his unit, as to the date when he last returned from leave, whether he was married or single, about children, and as to the whereabouts of his home. Little evidence was obtained of spread within the unit by means of blankets. In only 2 cases was there any connexion with another case within the unit (i.e., sleeping in the same hut or guard-room). In several cases it was evident that scabies had been present for at least 14 days before being detected, and yet skin inspection of other men of the hut failed to disclose further cases. The cases occurred at an even rate throughout the 7 months; there were no little epidemics confined to one hut or one company such as readily occur in pediculosis, which is undoubtedly spread by fomites.

Direct evidence of scabies acquired on leave was difficult to obtain. To contract scabies is considered by the men to be a disgrace, and as they are not willing to admit that their families could have the disease, great tact is necessary in questioning them. In 5 instances, however, clear evidence that there was scabies at home was obtained. It was found that out of the 36 cases 14 (39%) developed the condition within a week, 2 (5.5%) within 2 weeks, and 5 (14%) within 3 weeks of returning from leave. Thus 58.5% developed scabies within 3 weeks of returning. The leave rate during this time was about 6.4% a week, so in a normal group of men only 19% could have been expected to return from leave within 3 weeks. If Mellanby's views are correct a higher proportion of married men in the series was to be expected: actually it was found that 74% were married. In a control group of men from the unit only 51% were married. The towns where the men had been on leave were those of the industrial North and Midlands. No particular town was found to be associated with an undue proportion of these cases.

Mellanby (1941b) estimated the incidence of scabies in the general population as about 25 per 1,000. In the period under review there were 39 cases, and 1,700 men went on leave and were in contact with their homes. If 60% of cases are due to infection from home then a rough approximation of a scabies incidence in the general population of 16 per 1,000 is arrived at. If it is believed that a higher proportion than 60% are infected at home, then the figures rise to 23 per 1,000. When, therefore, the incidence of scabies in the unit is compared with Mellanby's figures for the general population it is not inconsistent to hold the view that the majority of cases were infected on leave.

CONCLUSION

Consideration of the cases of scabies occurring in an Army unit over a period of 7 months suggested that the majority of these men were infected from their homes while on leave. It would seem that blankets and clothes do not play a large part in transmission, and that fairly prolonged and intimate contact with another case is necessary to acquire the disease. The disease cannot be reduced much further in the Army at home until the problem of civilian scabies is vigorously tackled.

P. N. COLEMAN,
Captain, R.A.M.C.

REFERENCES

- Mellanby, K. (1941a). *British Medical Journal*, **2**, 405.
 — (1941b). *Med. Off.*, **66**, 141.