THE TIME FACTOR IN THE EXAMINATION OF SEMINAL FLUID

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In many communications too numerous to cite it is assumed that the characters of a seminal fluid must change rapidly after ejaculation, and it is therefore recommended that the specimen should be voided on the premises where the examination is to be made and the investigation carried out as soon as possible. Liquefaction is certainly governed by the time factor, but this property is not known to affect the potency of the fluid. The following investigation shows that of the estimations performed in routine laboratories only the motility is influenced significantly by the usual time factor, and that not to the extent which might be imagined.

Scope of the Investigation

During a year at the Women's Hospital, Liverpool, 131 specimens of semen were examined. No special fertility clinic is held, and the patients were seen at the ordinary out-patient sessions by the six visiting surgeons. Thirteen specimens showed complete aspermia and are not included in the analysis. Forty-three were collected by masturbation and seen within a few minutes. In all these cases the specimen was maintained at 37° C. until liquid, and investigations were completed within an hour of the sample being passed. The remaining 75 were collected at the patients' homes and brought up the same day in clean glass containers. The wives were instructed that coitus interruptus should be employed and all the ejaculate collected, a feat in which they appear to have been uniformly successful. However, some may well have been collected by masturbation at home. No particular instructions were given about transport.

One surgeon preferred to instruct husbands to attend the laboratory, but it was not always possible to arrange this. Husbands sometimes attended clinics with their wives, in which case the specimen was often collected on the spot. The two sets would thus appear to be unselected. All

the husbands alleged five days' abstinence before collection of the ejaculate.

For each specimen the volume, sperm count, percentage of motile forms, and percentage of normal ones were determined. During the year estimation of fructose, using the method of Pritchard and Young (1947), was performed on 65 consecutive samples, four being aspermias, 26 collected in the laboratory and 35 outside. All examinations were made by one technician, so that all were strictly comparable. This is of especial importance for such observations as the proportion of normal forms, which must depend on personal opinion to some extent.

Discussion of Table

In the Table are shown the mean values for the observation in the two series, and the maximum and minimum values obtained. (Full results have been deposited with the British Museum (Natural History), Cromwell Road, London, S.W.7, and can be obtained by any who are interested.)

TABLE
VALUES OBTAINED FOR THE SERIES

	Collected Outside			Collected in Laboratory		
	Max.	Min.	Mean	Max.	Min.	Mean
Volume (ml.) ...	6.5	1.0	3.3	6.3	1.0	2.9
Motility (% of total) ..	90	0	60	95	0	40
Count (m./ml.) ..	140	10	71	141	5	66
% of normal forms ..	95	55	84	100	60	85
Fructose (mg.%)*	330	109	190	410	120	209

* 26 cases collected in laboratory, 35 at subjects' homes.

For each pair of means the value of P was calculated by the method of Fisher (1944); none were significant (< 0.01) except for motility.

Correlation coefficients were calculated for each possible pair of observations in both series of samples. With one exception they all gave a positive value, but none were within the range

considered by Fisher to be of significance. This would appear to indicate that in man there is considerable individual variation in the contributions of the different glands of the male genital tract to the total of the seminal fluid. Wide variations are known to occur between species (see Mann and Lutwak-Mann, 1951). Some low counts were associated with large volume (cf. White and Barton, 1951), but not often enough for statistical treatment. Presumably the seminal vesicles contribute largely to these specimens.

As far as the properties measured are concerned there is obviously no difference between a semen ejaculated as the result of masturbation and that produced during normal coitus.

For one pair of results a negative correlation coefficient was obtained. This was for motility and time of examination after collection and before examination in the case of specimens produced outside hospital. This confirms the significance of the difference between the means of these values. However, the actual value of the coefficient was not significant; presumably the times observed were too short for a gradient to become apparent although sufficient to produce a significant change.

Summary and Conclusions

Volume, sperm count, sperm motility, and percentage of normal forms were estimated in 43 specimens of semen examined within an hour of ejaculation, and 75 brought to the laboratory during the day after passing. Fructose was estimated on 26 of the former and 35 of the latter.

No significant difference was found between the two series except for motility. Insignificant correlations between pairs of observations appear to show that in man the contributions of the various sex glands to the semen vary widely between individuals. The number of aspermias observed was too small for statistical treatment to yield significant results.

In practice, therefore, masturbation produces a representative seminal specimen, but one collected at home is certainly useful.

I have to thank my colleagues at the Women's Hospital, Liverpool, for permission to publish findings in their cases. All the estimations were made by Mr. F. Jordan, A.I.M.L.T.

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