product of the gonads by reflex muscular effort, or it is that reflex which would expel these products were they present in sufficient quantity and were the appropriate pathways clear. This activity is known as ejaculation and the female has no homologue of this activity, which is unique to the male.—I am, etc.,

T. RUSSELL

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** We showed Dr. Russell's letter to Professor Taylor, whose reply is printed below.—Ed., B.M.J.

SIR,—It is interesting that having challenged some of the things I wrote as being incapable of substantiation Dr. Russell then goes on—in the sentence—to claim that what I say is more fantasy than fact. This must surely be equally difficult to substantiate.

It is true in one sense that coitus is but part of a complete reproductive act. I might go further than he does and say that the care of the offspring is also a part of the process. However, to reach the conclusion he does is to ignore the possibility that with the advent of human sensibility orgasm has come to have a satisfaction, and perhaps indeed a purpose, quite separate from that of reproduction. The fact that there is no clear pattern to the acceptability of intercourse by the woman would suggest this. Evolution is occurring in patterns of behaviour as well as in our physical attributes.

The physiological response to sexual stimuli, including the contraction of the muscle deep to the areola and the erection of the clitoris, have all been demonstrated and well documented in the sources I quoted, so to prove that they do not occur an equally impressive body of experimental evidence must be cited. Equally, the occurrence of changes in the shape of the vaginal vault and contractions of the levator ani muscles and of the uterus which accompany the female orgasm are also documented by research workers of good reputation. If one was to seek a purpose for these changes it may very well be found in the speed with which spermatozoa can make their way into the Fallopian tubes. It is, I think, too much to postulate that they always make their way by their own power. The "orgasm" of the female can at least assist the process. However, speculation on these lines is likely to be as unprofitable to me as it appears to be to others, so I will desist.—I am, etc.,

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Picking a Diuretic

SIR,—Your excellent leading article "Picking a Diuretic" (7 June, p. 521) glosses over, I think, the most important advantages of the "loop" diuretics. I write late as I had expected a more brisk response in your columns.

The advantage of a quick-acting diuretic is that the time of day can be chosen when it is socially as well as medically most convenient. I usually recommend that it be taken at 5 p.m., when a diuresis is unlikely to interrupt work and when the patient can be resting with his feet up to enhance the efficacy of the diuretic. Further, during the

diuretic phase the patient is not so likely to compensate by taking large quantities of fluids, and so he goes to bed at his most dehydrated. As you so rightly mention the reduction in nocturia—often the first sign of falling cardiac output—can be gratifying to the patient.

Surely we give a diuretic not for the cosmetic advantage of reducing ankle oedema but to reduce the complications of left ventricular failure? The virtual absence of paroxysmal nocturnal dyspnoea since I started to give frusemide at 5 p.m. has not only given the patients better nights but me. Yes, thiazides for hypertension but a quick-acting diuretic at the appropriate time for oedema. Choose the right time and the dose, and cost, can be reduced. Surely this was the conclusion that Dr. A. S. Playfair (5 July, p. 42) could have reached.—I am, etc.,

MICHAEL WATSON

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Prolactin and Uric Acid in Man

SIR,—The relationship between high levels of prolactin in plasma and high or increasing plasma uric acid concentration recently reported in patients with pre-eclampsia by Dr. C. W. G. Redman and others (8 February, p. 304) suggested that prolactin might have a direct influence in the control or modulation of uric acid metabolism or excretion in pregnancy. We have examined the relationship between plasma prolactin and plasma uric acid in normal subjects in the unstressed state, and again after inducing increases in the level of plasma uric acid by administration of frusemide followed by sodium restriction.

The concentrations of prolactin, determined by radioimmunoassay,¹ and uric acid were measured in plasma obtained from six male volunteers (aged 20–25) at 6 p.m. Frusemide 80 mg was then given orally and the subjects consumed a diet containing 20 mmol sodium and 100 mmol potassium for 38 hours. After 38 hours the sodium deficit was 255 ± 60 mmol (mean $\pm$ S.E.M.), and at this time measurement of plasma prolactin and plasma uric acid was repeated.

The initial unstressed plasma prolactin correlated negatively with the plasma uric acid ($r = -0.94$, $P < 0.01$) (see fig.). After acute sodium deprivation there was a rise in plasma uric acid from 0.36 ± 0.05 mmol/l (6.1 ± 0.89 mg/100 ml) to 0.45 ± 0.03 mmol/l (7.6 ± 0.55 mg/100 ml) ($t = 5.88$, $P < 0.01$; Student's t test for paired observations). Plasma prolactin (initially 0.13 ± 0.088 U/l) also increased to 0.18 ± 0.097 U/l ($t = 4.03$, $P < 0.01$). However, this rise would be within the expected range of normal circadian variation in man. There was still a correlation between the plasma prolactin and the plasma uric acid ($r = -0.92$, $P < 0.01$). The slopes of the two regressions were not significantly different but there was a significant difference between the y intercepts ($P < 0.001$).

These results confirm that there is a relationship between plasma prolactin and plasma uric acid. Under the present experimental circumstances, however, the relationship was in a direction opposite to that observed in pre-eclampsia. It seems unlikely that the plasma prolactin has a consistent role in determining uric acid disposition as the re-

Relationship between plasma uric acid and plasma prolactin in 6 male subjects (—●—●—) and in the same 6 subjects after a sodium deficit of 255 ± 60 mmol (mean $\pm$ S.E.M.) (---○---○---).

Conversion of SI to Traditional Units—Plasma Uric acid 1 mmol/l $\approx$ 16.8 mg/100 ml.

lationship has differed in each of the situations examined. Probably some more fundamental process is influencing both prolactin and uric acid disposition. A further understanding of this might provide an insight into the physiological significance of prolactin in man.—We are, etc.,

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¹ Cole, E. N., and Boyns, A. R., *Hormone Research*, 1973, 4, 261.

Coxsackie Viruses, Muscles, and Exercise

SIR,—Your correspondent Dr. J. V. Jones (12 July, p. 100) may perhaps consider himself lucky. Dr. D. Lewes and colleagues¹ recently suggested that myalgia in acute viral infections might be an indicator of silent myocarditis. They drew attention to reports of deaths in circumstances suggesting that in man as in mice exercise during acute infection might enhance the severity of the disease.^{2,3} Coxsackie viruses belong to the same enterovirus group as polioviruses, and there may be an analogy with the enhancement of the severity of paralysis by strenuous exercise during the early phases of poliomyelitis. "Work if off" seems to be a dangerous injunction in systemic infections. Childbirth combines strenuous exercise with hormonal influences and post-partum myocardiopathy may well be due to exacerbated coxsackie-virus infection.⁴—I am, etc.,

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¹ Lewes, D., Rainford, D. J., and Lane, W. F., *British Heart Journal*, 1974, 36, 932.

² Sutton, G. C., et al., *Aerospace Medicine*, 1967, 38, 66.

³ Monif, G. R. G., Lee, C. W., and Hsiung, G. D., *New England Journal of Medicine*, 1967, 277, 1353.

⁴ Sainani, G. S., Krompotic, E., and Słodki, S. J., *Medicine*, 1968, 47, 133.