Fig. 5 Comparison of two m² samples of species-rich vegetation with respect to the potential growth rates of the component species. *a*, Productive meadow (Coombsdale, Derbyshire). *b*, Ancient limestone pasture (Cressbrookdale, Derbyshire). (Grime and Hunt, unpublished.) In each figure the species are arranged in order of decreasing % occurrence in 10 × 10 cm subdivisions of the m² quadrat. The encircled values refer to the RGR_{max} of the species. The open circles indicate species for which no growth-rate estimations are available. * Species of high (>6.0) competitive index.

species density when grazing or mowing is relaxed. Where values for RGR_{max} are low the ensuing reduction in species density is likely to proceed at a relatively slow rate.

Here differences in species density have been related to variation in stress imposed by environment or by certain forms of management and to variation in the frequency and vigour of species of high competitive ability. The impact of additional factors such as site accessibility and degree of niche-differentiation upon species density will be reported elsewhere.

J. P. GRIME

Nature Conservancy Grassland Research Unit,
Department of Botany,
The University, Sheffield

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- Olsen, C., *J. Ecol.*, **9**, 1 (1921).
- Greig-Smith, P., *J. Ecol.*, **36**, 339 (1948).
- Monsi, M., and Saeki, T., *Jap. J. Bot.*, **14**, 22 (1953).
- Watt, A. S., *J. Ecol.*, **43**, 490 (1955).
- Black, J. N., *Aust. J. Agric. Res.*, **9**, 299 (1958).
- Donald, C. M., *Aust. J. Agric. Res.*, **9**, 421 (1958).
- Thurston, J. M., *Ann. Appl. Biol.*, **47**, 716 (1959).
- Black, J. N., *Aust. J. Agric. Res.*, **11**, 277 (1960).
- Palmer, J. H., and Sagar, G. R., *J. Ecol.*, **51**, 783 (1963).
- Ellenberg, H., *Vegetation Mitteleuropas mit den Alpen, in Kausaler, Dynamischer und Historischer Sicht*. (Stuttgart, 1963).
- Willis, A. J., *J. Ecol.*, **51**, 353 (1963).
- Grime, J. P., *J. Ecol.*, **51**, 391 (1963).
- Smith, C. J., Elston, J., and Bunting, A. H., *J. Br. Grassld. Soc.*, **26**, 213 (1971).
- Maarel, E. Van der, in *The Scientific Management of Animal and Plant Communities for Conservation* (edit. by Duffey, E., and Watt, A. S.), 45 (Blackwell, Oxford, 1971).
- Clapham, A. R., Tutin, T. G., and Warburg, E. F., *Flora of the British Isles* (Cambridge, 1964).
- Clarkson, D. T., *J. Ecol.*, **55**, 111 (1967).
- Higgs, D. E. B., and James, D. B., *J. Ecol.*, **57**, 553 (1969).
- Pigott, C. F., and Taylor, K., *J. Ecol.*, **52** (Suppl.), 175 (1964).
- Grime, J. P., in *Light as an Ecological Factor* (edit. by Bainbridge, R., Evans, G. C., and Rackham, O.), 187 (Blackwell, Oxford, 1966).
- Hutchinson, T. C., *J. Ecol.*, **55**, 291 (1967).
- Loach, K., *New Phytol.*, **66**, 607 (1967).
- Parsons, R. F., *Oecologia Plantarum*, **3**, 121 (1968).

- Parsons, R. F., *Amer. Nat.*, **102**, 595 (1968).
- Newhouse, M. E., and Madgwick, H. A. I., *Forest Sci.*, **14**, 27 (1968).
- Loach, K., *New Phytol.*, **69**, 273 (1970).
- Tansley, A. G., and Adamson, R. S., *J. Ecol.*, **13**, 177 (1925).
- Hope-Simpson, J. F., *J. Ecol.*, **28**, 386 (1940).
- Jeffrey, D. W., in *The Scientific Management of Animal and Plant Communities for Conservation* (edit. by Duffey, E., and Watt, A. S.), 79 (Blackwell, Oxford, 1971).
- Yemm, E. W., and Willis, A. J., *Weed Research*, **2**, 24 (1962).
- Odum, E. P., *Ecology* (Holt, Rinehart and Winston, New York, 1963).
- de Boer, T. A., and Ferrari, T. J., *Versl. Landb. Onderz.*, **62**, 1 (1957).
- Bradshaw, A. D., Chadwick, M. J., Jowett, D., and Snaydon, R. W., *J. Ecol.*, **52**, 665 (1964).
- Kruijine, A. A., *Jaarb. Inst. Biol. Scheik. Onderz. Landb.*, 175 (1960).
- Hunt, R., thesis, Univ. of Sheffield (1970).

Gestation Period for Australopithecus

LEUTENEGGER¹ has provided estimates of the foetal size at birth of two species of *Australopithecus*. Huggert and Widdas² drew attention to the relationship between foetal age and weight in mammals, and we have been assessing both specific foetal growth rates and length of gestation (J. F. D. F. and A. St G. Huggert, unpublished data). It is quite clear that in the higher primates the foetal growth rate is 0.06. Using this and the estimates of foetal sizes at birth in the Huggert/Widdas formula² we obtain gestation periods for *A. africanus* of 257 days and *A. robustus* 300 days.

J. F. D. FRAZER

The Nature Conservancy,
19 Belgrave Square,
London SW1X 8PY

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- Leutenegger, W., *Nature*, **240**, 568 (1973).
- Huggert, A. St G., and Widdas, W. F., *J. Physiol.*, **114**, 306 (1952).