

BIBLIOGRAFÍA

- ABBOTT, M. R., POWELL, T. M., y RICH-
SON, P. J. 1982. The relationship of environmen-
tal variability to the spatial patterns of phyto-
plankton biomass in Lake Tahoe. *J. Plankton
Res.*, 4: 927-941.
- ADAMS, J. M., FAURE, H., FAURE-DENARD,
L., MCGLADE, J. M., y WOODWARD, F. I. 1990.
Increases in terrestrial carbon storage from the
Last Glacial Maximum to the present. *Nature*,
348: 711-714.
- ADOLPH, E. F. 1931. *The regulation of size as
illustrated in unicellular organisms*. C. S. Thomas
Publ., Springfield, etc., 233 pp.
- ALLEN, T. F. H., y STARR, T. B. 1982.
Hierarchy. Univ. Chicago Press, 310 pp.
- ALCARAZ, M. 1988. Summer zooplankton
metabolism and its relation to primary produc-
tion in the Western Mediterranean. *Oceanolo-
gica Acta Sp.* iss. 9: 185-191.
- ALTMANN, S. A. 1965. Sociobiology of
Rhesus monkeys, II: Stochastics of social com-
munication. *J. theoret. Biol.*, 8: 490-522.
- ALVAREZ, W. et al. 1989. *Catastrophes and
Evolution: Astronomical Foundations*. The 1988
BAAS Mason Meeting of the Royal Astronomi-
cal Society at Oxford. Cambridge Univ. Press,
Cambridge, etc., 239 pp.
- ANDERSSON, W. W. 1966. Genetic divergen-
ce in M. Vethukhiv's experimental populations of
Drosophila pseudoobscura. 3. Divergence in
body size. *Genet. Res.*, 7: 255-266.
- ARMSTRONG, R. A., y GILPIN, M. E. 1977.
Evolution in a time-varying environment. *Scien-
ce*, 195: 591-592.
- ARP, A. J., y CHILDRESS, J. J. 1983. Sulfide
binding by the blood of the hydrothermal vent
tube worm *Riftia pachyptila*. *Science*, 2109-
283-285.
- ARRHENIUS, G. 1952. Sediment cores from
the East Pacific. *Rep. Swed. Deep Sea Exp.*, 5(1):
1-227.
- ASPEY, W. P., y LUSTICK, S. I. (eds.) 1983.
*Behavioral Energetics. The cost of survival in ver-
tebrates*. Ohio State Univ. Press, Columbus,
Ohio, 300 pp.
- ATTALLA, R. H., y VANDERHART, D. L.
1984. Native cellulose. A composite of two dis-
tinct crystalline forms. *Science*, 223: 283-285.
- AYALA, F. J., y VALENTINE, J. W. 1979. Ge-
netic variability in the pelagic environment: A
paradox? *Ecology*, 60: 24-29.
- BALDWIN, I. T., y SCHULTZ, J. C. 1983. Ra-
pid changes in tree leaf chemistry induced by da-
mage: Evidence for communication between
plants. *Science*, 221: 277-279.
- BALES, G. STEVEN, BRUINSMA, R., EKLUND,
R. A., KARUNASTRI, R. P. U., RUDNICK, J., y
ZANGWILL, A. 1990. Growth and Erosion of thin
solid Films. *Science*, 249: 264-268.
- BANSE, K. 1991. Iron availability, nitrate up-
take, and exportable new production in the Su-
barctic Pacific. *J. Geophys. Res.*, 96: 741-748.
- BARBIERI, M. 1985. *The semantic theory of
Evolution*. Harwood Acad. Publ., Chur, London,
etc., 188 pp.
- BARKAI, A., y MCQUAID, C. 1988. Predator-
Prey Role Reversal in a Marine Benthic Ecosys-
tem. *Science*, 242: 62-64.
- BATES, G. H. 1950. *J. Anim. Ecol.*, 19:
21-28.
- BATES, M. 1960. *The Forest and the Sea*. Ti-
me Inc., New York, 272 pp.
- BELL, G. 1988. *Sex and Death in Protozoa*.
The History an Obsession. Cambridge Univ.
Press, Cambridge, New York, etc., 199 pp.
- BERGMANN, C. 1847. Über die Verhältnisse
der Wärmeökonomie der Thiere zu ihrer Grös-
se. *Göttingerstudien, I Abt.*, 3: 595-708.
- BETHGE, H. 1925. *Melosira* und ihre Plank-
tonbegleiter. *Pflanzenforschung*, 3: 1-80.
- BLASCO, D. 1971. *Acumulacion de nitritos en
determinados niveles marinos por acción del fi-*

toplankton. Tesis Univ. Barcelona, 223 pp.

BLUM, H. F. 1935. A consideration of evolution from a thermodynamic viewpoint. *Amer. Nat.*, 69: 354-369.

BOGDANOV, C. A. 1968. Factors governing the reproduction of certain sardines. *Prob. Ichthy. (USSR)*, 8: 695-704.

BOMBER, J. W., MORTON, S. L., BABINCHAK, J. A., NORRIS, D. R., y MORTON, J. G. 1988. Epiphytic dinoflagellates on drift algae — another toxigenic community in the Ciguatera food chain. *Bull. Mar. Science*, 43: 204-214.

BONETTO, A. A., y WAIS, I. R. 1990. The Parana Basin in the context of large American river-floodplain systems. *Ecosur*, 16: 1-31.

BORMANN, F. H., y LIKENS, G. E. 1969. The watershed-ecosystem concept and studies in nutrient cycles. In *The Ecosystem concept in natural resource management*, edit. G. M. van Dyne. Academic Press, New York, pp. 49-76.

BOYD, R., y RICHERSON, P. J. 1985. *Culture and the evolutionary process*. Univ. Chicago Press, Chicago and London, 331 pp.

BRADBURY, R. H. 1978. Complex systems in simple environments. *Mar. Biol.*, 50: 17-28.

BRAUN-BLANQUET, J. 1928. *Pflansensoziologie*. Julius Springer, Berlín.

BRAUN-BLANQUET, J., y PAVILLARD, J. 1928. *Vocabulaire de Sociologie Végétale*. 3.^a ed. Montpellier.

BRIAND, F. 1985. Structural regularities in freshwater food-webs. *Verh. intern. Verein Limnol.*, 22: 3356-3364.

BRIAND, F., y COHEN, J. E. 1987. Environmental correlates of food chain length. *Science*, 238: 956-960.

BRILLOUIN, L. 1951. Information and Entropy. *J. Appl. Phys.*, 22: 334-338.

BRISCOE, M. G. 1984. Tides, solitons and nutrients. *Nature*, 312: 15.

BROMLEY, R. G. 1990. *Trace Fossils. Biology and Taphonomy*. Unwin Hyman, London, 280 pp.

BROOKS, D. R., COLLIER, J., y WILEY, E. O. 1986. Definition of terms and the essence of theories. *Syst. Zool.*, 35: 640-647.

BROOKS, D. R., y WILEY, E. O. 1986. *Evolution as Entropy. Toward a unified Theory of Biology*. Chicago Univ. Press, 335 pp.

BROWN, S., y LUGO, A. E. 1984. Biomass of tropical forest: A new estimate based on forest volumes. *Science*, 223: 1290-1293.

BUCKLEY, R. 1983. A possible mechanism for maintaining diversity in species-rich commu-

nities: an addendum to Connell's hypothesis. *Oikos*, 40:2.

BULLOCK, Th. H. 1981. Spikeless neurones: Where we go from here? In *Neurons without impulses*, edit. A. Roberts and B. M. H. Bush. Cambridge Univ. Press (Exper. Biol. Seminar Series, 6), pp. 269-284.

BURROUGH, P. A. 1981. Fractal dimensions of landscapes and other environmental data. *Nature*, 294: 240-242.

CADDY, J. F. 1975. Spatial model for an exploited shellfish population, and its application to the Georges Bank scallop fishery. *J. Fish. Res. Bd. Canada*, 32: 1305-1328.

CAIRNS, J. L. 1967. Asymmetry of internal tidal waves in shallow coastal waters. *J. Geophys. res.*, 72: 3563-3565.

CAIRNS-SMITH, A. G. 1982. *Genetic takeover and the mineral origins of life*. Cambridge Univ. Press, Cambridge, etc., 477 pp.

CAMPBELL, D. E., y WROBLEWSKI, J. S. 1986. Fundy tidal power development and fish production in the Gulf of Maine. *Can. J. Fish. Aquat. Sci.*, 43: 78-89.

CASTI, J., y KARLOVIST, A. (edits.) 1989. *Newton to Aristotle. Toward a Theory of Models for Living Systems*. Birkhäuser; Boston, Basel, Berlin, 284 pp.

CATALA, R. 1959. Fluorescent effects from coral irradiated with ultraviolet rays. *Nature*, 183: 949.

CATES, R. G., y ORIAN, G. H. 1975. Successional status and the palatability of plants to generalized herbivores. *Ecology*, 56: 410-418.

CAVALLI-SORZA, L. L., y FELDMAN, M. W. 1981. *Cultural transmission and evolution. A quantitative approach*. Princeton Univ. Press, Princeton, N. J., 388 pp.

CAVERS, P. B., y SEEL, M. G. 1984. Patterns of change in seed weight over time on individual plants. *Amer. Nat.*, 124: 324-335.

CENTRELLA, J., y MELOTT, A. L. 1983. Three-dimensional simulation of large-scale structure in the Universe. *Nature*, 305: 196-198.

CHAITIN, G. J. 1975. Randomness and mathematical proof. *Scient. Amer.*, May 1975, 47-52.

CHANG, D., DESMARAIS, D., MACK, R. MILLER, S. L., y STRATHEARN, G. E. 1983. Prebiotic Organic Synthesis and the Origin of Life. In Schopf, J. W. (edit.): *Earth's earliest Biosphere. Its Origin and Evolution*. Princeton Univ. Press, Princeton, 543 pp.

CHILDRESS, J. J. *et al.* 1988. Hydrothermal vents. A case study of the biology and chemistry of the Deep-Sea Hydrothermal Vents of the Ga-

lapagos Rift. *Deep-Sea Res.*, 35 (10/11 A): 1677-1849.

CLAYTON, D. A. 1987. Why mudskippers build walls. *Behaviour*, 102: 185-195.

CLEMENTS, F. E. 1916. Plant succession, an analysis of the development of vegetation. *Carnegie Inst. Washington publ.*, 242: 1-512.

CLEMENTS, F. E. 1936. Nature and structure of the climax. *J. Ecol.*, 24: 252-284.

COHEN, J. E., y BRIAND, F. 1984. Trophic links of community food-webs. *Proc. Natl. Acad. Sci. USA*, 81: 4105-4109.

COHEN, J. O. 1971. *Casual groups of monkeys and men*. Harvard Univ. Press, Cambridge, Mass., 175 pp.

COLE, B. J. 1985. Size and behavior in ants: Constraints on complexity. *Proc. Natl. Acad. Sci. USA*, 82: 8548-8551.

CONNELL, J. H. 1961. Effects of competition, predation by *Thais lapillus*, and other factors on natural populations of the barnacle *Balanus balanoides*. *Ecol. Monogr.*, 31: 61-104.

CONNELL, J. H. 1978. Diversity in tropical rain forests and coral reefs. *Science*, 199: 1302-1310.

CONNOR, E. F., y SIMBERLOFF, D. 1979. The assembly of species communities: Chance or competition? *Ecology*, 60: 1132-1140.

CONRAD, M. 1983. *Adaptability: The significance of variability from molecule to ecosystem*. Plenum, New York.

COOK, P. J., y SHERGOLD, J. H. (edits.) 1986. *Phosphate deposits of the world*. Vol. 1. Cambridge Univ. Press, New York, 386 pp.

COTT, H. B. 1949 (reprinted 1966). *Adaptive colorations in animals*. Methuen and Co., London.

COX, P. A. 1981. Niche partitioning between sexes of dioecious plants. *Amer. Natur.*, 117: 295-307.

CRESSER, M. y EDWARDS, A. 1987 (1989). *Acidification of freshwaters*. Cambridge Univ. Press.

CUNNINGHAM, W. C. 1963. The concept of stability. *Amer. Scientist*, 51: 425-436.

CURIO, E., U. ERNST, y VIETH, W. 1978. Cultural transmission of enemy recognition. One function of mobbing. *Science*, 202: 293-301.

CUSHING, C. E. 1979. Trace elements in a Columbia river food web. *Northwest Science*, 53: 118-125.

DANSEREAU, P. 1946. *Rev. Brasil. Geogr.*, 8: 189-210.

DANSEREAU, P. 1954. Climax vegetation and

the regional shift of controls. *Ecology*, 35: 575-579.

DAVIES, P. C. W. 1984. Inflation in the universe and time asymmetry. *Nature*, 312: 524-527.

DAWKINS, R. 1976. *The selfish gene*. Oxford Univ. Press., 224 pp.

DEAN, W. 1988. *History making history. The new historicism in American religious thought*. State Univ. New York Press, 175 pp.

DE ANGELIS, D. L. 1975. Stability and connectance in food web models. *Ecology*, 56: 238-243.

DE ANGELIS, D. L., GARDNER, R. H., MANKIN, J. B., POST, W. M., y CARNEY, J. H. 1978. Energy flow and the number of trophic levels in ecological communities. *Nature*, 273: 406-407.

DEGENS, E. T., y STOFFERS, P. 1976. Stratified waters as a key to the past. *Nature*, 263: 22-27.

DELWICHE, Ch. F., GRAHAM, L. E., y THOMSON, N. 1989. Lignin-Like Compounds and Sporopollenin in *Coleochaete*, an Algal Model for land Plant Ancestry. *Science*, 245: 399-401.

DEMENTIEV, G. P. 1955. *XI Congrès Intern. Ornithologie*, pp. 264-267. Birkhäuser, Basel.

DEVAL, J., FELFÖLDY, L., WITTNER, J., y PLÓSZ, S. 1988. Detection of phosphine: new aspects of the phosphorus cycle in the hydrosphere. *Nature*, 333: 343-345.

DIRZO, R., y SARUKHÁN, J. (edits.) 1984. *Perspectives on plant population ecology*. Sinauer Associates, Inc., Sunderland, Mass., 478 pp.

DONHOFFER, S. 1986. Body size and metabolic rate: Exponent and coefficient of the allometric equation. The role of units. *J. theor. Biol.*, 119: 125-137.

DRURY, W. H., y NISBET, J. C. T. 1973. Succession. *J. Arnold Arboretum*, 54: 331-368.

DUBINSKY, Z. (edit.) 1990. *Coral Reefs*. In Ecosystems of the World, 25. Elsevier, Amsterdam, etc., 550 pp.

DUBOIS, D. M. 1975. A model of patchiness for prey-predator plankton populations. *Ecological Modelling*, 1: 67-8).

DUGDALE, R. C. y GOERING, J. J. 1967. Uptake of new and regenerate forms of nitrogen in primary productivity. *Limol. Oceanogr.*, 12: 196-206.

DYSON, F. J. 1979. Time without end. Physics and biology in an open universe. *Rev. Mod. Phys.*, 51: 447-460.

EIDT, R. C. 1977. Detection and examination of anthrosols by phosphate analysis. *Science*, 1327-1333.

ELDREDGE, N. 1985. *Time frames: The rethinking of darwinian evolution and the theory of punctuated equilibria*. Simon and Schuster, New York, 240 pp.

ELGAVISH, A., ELGAVISH, G. A., HALMAN, M., y BERMAN, T. 1981. Phosphorus utilization and storage in batch cultures of the Dinoflagellate *Peridinium cinctum* f. *westi*. *J. Phycol.*, 16: 626-633.

ELSASSER, W. M. 1975. *The chief abstractions of Biology*. North Holland/American Elsevier, Amsterdam, 261 pp.

EPPLEY, R. W., y PETERSON, B. J. 1979. Particulate organic matter flux and planktonic new production in the deep ocean. *Nature*, 282: 677-680.

ESTRADA, M., MARRASÉ, C., y ALCARAZ, M. 1988. Phytoplankton response to intermittent stirring and nutrient addition in marine microcosms. *Mar. Ecol., Progress S.*, 48: 225-234.

FAIRSCHILD, L. 1981. Mate selection and behavioural thermoregulation in Fowler's toad. *Science*, 212: 950-951.

FALKOWSKI, P. G. (edit.) 1980. *Primary productivity in the sea*. Plenum Press, New York, 531 pp.

FALKOWSKI, P. G. 1983. Light-shade adaptation and vertical mixing of marine phytoplankton: A comparative field study. *J. Mar. Res.*, 41: 215-237.

FARRAR, J. F. 1976. The lichen as an ecosystem: Observation and experiment. In *Lichenology: Progress and Problems*, edit. D. H. Brown, D. L. Hawksworth and R. H. Bailey, pp. 385-406. Academic Press, London and New York.

FAUTH, H., y colabs. 1985. Geochemische Atlas Bundesrepublik Deutschland. Verteilung von Schwermetallen in Wässern und Bachsedimenten. *Bundesanstalt für Geowissenschaften und Rohstoffe*, Hanover.

FENCHEL, T. 1974. Intrinsic rate of natural increase: the relationship with body size. *Oecologia (Berlin)*, 14: 317-326.

FENCHEL, T., y FINLAY, B. J. 1989. *Kentrophoros*: A mouthless Ciliate with a symbiotic kitchen garden. *Ophelia*, 30: 75-93.

FORMAN, R. T. T. 1983. Corridors in a landscape: Their ecological structure and function. *Ekologia (CSSR)*, 2: 375-387.

FRAUTSCHI, S. 1982. Entropy in an expanding universe. *Science*, 217: 593-599.

FREEMAN, D. C., KLIKOFF, L. G., y HARPER, K. T. 1976. Differential resource utilization

by the sexes of dioecious plants. *Science*, 193: 597-599.

FRONTIER, S. 1978. Interface entre deux écosystèmes: Exemple dans le domaine pélagique. *Ann. Inst. Océan., N. S.*, 54: 95-106.

FRONTIER, S. 1985. Diversity and structure in aquatic ecosystems. *Oceanogr. Mar. Biol. Ann. Rev.*, 23: 253-312.

FUNK, V. A., y BROOKS, D. R. 1990. *Phylogenetic Systematics as the basis of comparative Biology*. Smithsonian Institution Press, Washington and London, 45 pp.

GARDNER, M. R., y ASHBY, W. R. 1970. Connectance of large dynamic (cybernetic) systems. Critical values for stability. *Nature*, 228: 784.

GARRET, Ch. 1984. Turning points in universal speculation on internal waves. In *It's water that makes you drunk. A celebration in Geophysics and Oceanography, 1982. In Honor of Walter Munk*, pp. 38-46. Scripps Inst. Oceanogr. Refer. Series, 84-5.

GATES, D. M. 1980. *Biophysical Ecology*. Springer Verlag, New York, etc., 611 pp.

GATTO, M. 1990. A general minimum principle for competing populations: Some Ecological and Evolutionary consequences. *Theoret. Popul. Biol.*, 37: 369-388.

GEIST, V. 1987. Bergmann's rule is invalid. *Canad. J. Zool.*, 65: 1035-1038.

GHOLZ, H. L. 1982. Environmental limits on aboveground net primary production, leaf area, and biomass in vegetation zones of the Pacific Northwest. *Ecology*, 63: 469-481.

GILES, K. L., y SERAFIS, V. 1974. Implications of rigescent integuments as a new structural feature of some algal chloroplasts. *Nature*, 248: 512-513.

GILLIS, D. M., KRAMER, D. L., y BELL, G. 1986. Taylor's Power Law (TPL, Taylor, 1961) as a consequence of Fretwell's (Fretwell & Lucas, 1970) ideal free distribution (IFD). *J. theor. Biol.*, 123: 281-287.

GILPIN, M. E. 1974. A Liapunov function for competition communities. *J. Theoret. Biol.*, 44: 35-48.

GILPIN, M. E. 1975. *Group selection in predatory-prey communities*. Princeton Univ. Press, Princeton, N. J., 110 pp.

GINI, C. 1912. Variabilità e mutabilità. *Studi Econ.-Giuridice Fac. Giurisprudenza Univ. Cagliari*, 3(2).

GIVNISH, T. J. (edit.) 1986. *On the economy of plant form and function*. Cambridge Univ. Press, 717 pp.

GLANSDORFF, P., y PRIGOGINE, I. 1971. *Thermodynamics theory of structure, stability and fluctuations*. Wiley, New York and London.

GLOVACINSKI, Z., y JÄRVINEN, O. 1975. Rate of secondary succession in forest bird communities. *Ornis Scand.*, 6: 33-40.

GÖDEL, K. 1931. Über formal unentscheidbare Sätze der Principia Mathematica and verwandter Systeme, I. *Monatshefte f. Mathem. u. Physik*, 38: 174-198.

GOEL, N. S., MAITRA, S. C., y MONTROLL, E. W. 1971. On the Volterra and other nonlinear models of interacting populations. *Rev. Modern Physics*, 43: 231-276.

GOODWIN, B. C. 1963. *Temporal organization in cells*. Academic Press, London and New York.

GOLACHOWSKA, J. 1984. Phosphorus in the bottom sediments of some lakes of the world. *Polskie Arch. Hydrobiol.*, 31: 175-205.

GOULD, S. J. 1973. The shape of things to come. *Syst. Zool.*, 22: 401-404.

GOULD, S. J. 1977. *Ontogeny and philogeny*. Harvard Univ. Press, Cambridge, 501 pp.

GRANT, J. W. C., y BAILY, I. A. E. 1981. Predator induction of crests in morphs of the *Daphnia carinata* King complex. *Limnol. Oceanogr.*, 26: 201-218.

GRIER, C. C., y RUMNING, S. W. 1977. Leaf area of mature Northwestern coniferous forests: relation to site water balance. *Ecology*, 58: 893-899.

HAG, B. U., HARDENBOL, J., y VAIL, P. R. 1987. Chronology of fluctuating sea levels since the Triassic. *Science*, 235: 1156-1167.

HAGSTRUM, D. W., y LEACH, C. E. 1973. Role of constant and fluctuating temperatures in determining development time and fecundity of three species of stored products Coleoptera. *Ann. Entom. Soc. Amer.*, 66: 407-410.

HAKEN, H. 1977. *Synergetics. An introduction. Nonequilibrium phase transitions and self-organization in Physics, Chemistry and Biology*. Springer Verlag, Berlin, 325 pp.

HALL, C. A. S. 1988. An assessment of several of the historically most influential theoretical models used in Ecology and of the data provided in their support. *Ecological Modelling*, 43: 5-31.

HALLET, B. 1990. Spatial self-organisation in geomorphology: from periodic bedforms and patterned ground to scale-invariant topography. *Earth-Science Reviews*, 29: 57-75.

HAMILTON, W. D. 1964. The genetical evolution of social behaviour. *J. theor. Biol.*, 7: 1-32.

HANSON, F. B., y TUCKWELL, H. C. 1981. Logistic growth with random density independent disasters. *Theoret. Pop. Biol.*, 19: 1-18.

HARESTAD, A. S., y BUNNELL, F. L. 1979. Home range and body weight. A reevaluation. *Ecology*, 60: 389-402.

HARPER, J. L. 1977. *Population biology of plants*. Academic Press, London.

HARPER, J. L., ROSEN, B. R., y WHITE, J. (eds.) 1986. *The Growth and Form of Modular Organisms*. The Royal Society, London, 250 pp.

HARTE, J., y MOROWITZ, H. 1975. Nutrient transit time diversity: A novel measure of ecological organization and stability, Preprint prepared for the U. S. Energy Res. and Develop. Administration. Berkeley, 7 pp.

HARVELL, C. D. 1984. Predator-induced defense in a marine Bryozoan. *Science*, 224: 1357-1359.

HARVEY, G. R., MOPPER, K., y DEGENS, E. T. 1972. Synthesis of carbohydrates on kaolinite. *Chem. Geol.*, 9: 79-87.

HASTENRATH, S., y LAMB, P. J. 1978. *Heat budget atlas of the tropical Atlantic and eastern Pacific oceans*. Univ. Wisconsin Press, Madison, 90 charts.

HASTINGS, H. M. 1982. The May-Wigner stability theorem. *J. theor. Biol.*, 97: 155-156.

HEDGES, J. I., CLARK, W. A., QUAY, P. D., RICHEY, J. E., DEVOL, A. H., y SANTOS, U. de M. 1986. Composition and fluxes of particulate organic material in the Amazon River. *Limnol. Oceanogr.*, 31: 717-738.

HENNIG, W. 1982. *Phylogenetische Systematik*. Verlag Paul Parey, Berlin und Hamburg, 246 pp.

HERMAN, A. W. 1989. Vertical relationships between chlorophyll, production and copepods in the Eastern Tropical Pacific. *J. Plankton Res.*, 11: 243-261.

HERRERA, C. M. 1987. Vertebrate-dispersed plants in the Iberian Peninsula: a study of fruit characteristics. *Ecol. Monographs*, 57: 305-331.

HIGASHI, M., y BURNS, T. P. (eds.) 1991. *Theoretical studies of ecosystems. The network perspective*. Cambridge Univ. Press, Cambridge, etc., 364 pp.

HIGASHI, M. y PATTEN, B. C. 1989. Dominance of indirect causality in Ecosystems. *Amer. Natur.*, 133: 288-302.

HILDEMAN, W. H., RAISON, R. L., CHEUNG, G., HULL, C. J., AKAKA, L., y OKAMOTO, J. 1977. Immunological specificity and memory in a sclerectinian coral. *Nature*, 270: 219-223.

- HINGA, K. R. 1988. Evidence for a higher average primary productivity in the Pacific than in the Atlantic Ocean. *Deep-Sea Res.*, 32: 117-126.
- HOLLAND, H. D., LAZAR, B., y MCCAFREY, M. 1986. Evolution of the atmosphere and oceans. *Nature*, 320: 27-33.
- HOLLAND, J., SPINDLER, K., HORODYSKI, F., GRABAN, E., NICHOLS, S., y VANDEPOL, S. 1982. Rapid evolution of RNA genomes. *Science*, 215: 1577-1585.
- HOLLIGAN, P. M., PINGREE, R. D., y MARDELL, G. T. 1985. Oceanic solitons, nutrient pulses and phytoplankton growth. *Nature*, 314: 348-350.
- HOLLING, C. S. 1973. Resilience and stability in ecological systems. *Annual Rev. Ecol. Systemat.*, 4: 1-23.
- HOLMES, J. C., y BETHEL, W. M. 1974. Modification of intermediate host behaviour in parasites. *Zool. J. Linnean Soc.*, 51 (suppl. 1): 123-149.
- HORN, H. S. 1975. Markovian properties of forest succession. In *Ecology and evolution of communities*, edit. by J. M. Diamond and M. L. Cody. Belknap Press of Harvard Univ. Press, Cambridge, Mass.
- HOWDEN, H. F. 1985. Expansion and contraction cycles, endemism and area: the taxon cycle brought full cycle. In G. E. Ball (edit.), *Taxonomy, Phylogeny and Zoogeography of beetles and ants. A volume dedicated to the memory of P. J. Darlington Jr. (1904-1983)*. Junk Publ., Dordrecht, pp. 473-487.
- HSÜ, K. J. 1987. *The great dying: Cosmic catastrophe, dinosaurs and the theory of evolution*. Harcourt, Brace Jovanovich, 292 pp.
- HUBER, B. 1928. Weitere quantitative Untersuchungen über das Wasserleitungssystem der Pflanzen. *Jb. Wiss. Bot.*, 67: 877-959.
- HUHEEY, J. E. 1988. Mathematical models of mimicry. In L. P. Brower (edit.), *Mimicry and the Evolutionary Process*. Univ. Chicago Press, pp. 22-41.
- HUMPHREYS, W. F. 1979. Production and respiration animal populations. *J. Anim. Ecol.*, 48: 427-453.
- HUTCHINSON, G. E. 1957. Concluding remarks. *Cold Spring Harbor Symp. Quant. Biol.*, 22: 415-427.
- HUTCHINSON, G. E. 1959. Homage to Santa Rosalia or why are there so many kinds of animals. *Amer. Natur.*, 93: 155-160.
- HUTCHINSON, G. E. 1965. *The Ecological*

- Theater and the Evolutionary Play*. Yale Univ. Press, New Haven.
- IGLESIAS, R. 1988. *Diversidad taxonómica y ataxonómica en poblaciones de insectos: Un ejemplo del ecosistema restinga*. Tesis doctoral Universidad de Barcelona, 141 pp.
- ISAACS, J. D. 1972. Unstructured marine food webs and «Pollutant analogues». *Fishery Bull.*, 70: 1053-1059.
- ITTEKKOT, V. 1988. Global trends in the nature of organic matter in river suspensions. *Nature*, 332: 436-438.
- IWASA, Y. 1982. Vertical migration of zooplankton, a game between predator and prey. *Amer. Natur.*, 120: 171-180.
- IWASA, Y. 1988. Free fitness that always increases in evolution. *J. theor. Biol.*, 135: 265-281.
- IWASA, Y., COHEN, D., y LEON, J. A. 1984. The height and crown shape, as result of competitive games. *J. theor. Biol.*, 112: 279-297.
- JACQUES, G. 1989. Primary production in the open Antarctic Ocean during the Austral Summer, a review. *Vie et Milieu*, 39: 1-17.
- JANTSCH, E. 1980. *The self-organizing Universe*. Pergamon Press. Oxford, etc., 343 pp.
- JANZEN, D. H. 1970. Herbivores and the number of tree species in tropical forests. *Amer. Natur.*, 104: 501-528.
- JÄRVINEN, O., y VÄISÄNEN, R. A. 1976. Between-year component of diversity in communities of breeding land birds. *Oikos*, 17: 34-39.
- JASSBY, A. D., y GOLDMAN, C. R. 1974. A quantitative measure of succession rate and its application to the phytoplankton of lakes. *Amer. Natur.*, 108: 688-693.
- JEFFRIES, C. 1975. Stability of ecosystems with complex food webs. *Theoret. Popul. Biol.*, 7: 149-155.
- JOHNSON, B. F. y JAMES, T. W. 1960. Alteration of cellular constituents by incubation temperature. *Expl. Cell. Res.*, 20: 66-70.
- JOHNSON, J. D., y HINMAN, C. W. 1980. Oils and rubber from arid land plants. *Science*, 208: 460-464.
- JOHNSON, L. 1981. The thermodynamic origin of ecosystems. *Canad. J. Fish. aquat. Sci.*, 38: 571-590.
- JOINER, K. A., FUHRMAN, S. A., MIETTINEN, H. M., KASTER, L. H., y MELLMAN, I. 1990. *Toxoplasma gondii*: Fusion competence of parasitophorous vacuoles in Fc receptor-transfected fibroblasts. *Science*, 641-646.
- JUNK, W. J., BAYLEY, P. B., y SPARKS, R. E. 1989. The flood pulse concept in river-flo-

- odplain systems. *Can. Spec. Publ. Fish. Aquat. Sci.*, 106: 110-127.
- KAWAGUTI, S. 1969. Effect of the green fluorescent pigment on the productivity of the reef corals. *Abstr. Micronesica*, 5: 313.
- KELZER, J. 1982. Nonequilibrium statistical thermodynamics and the effect of diffusion on chemical reaction rates. *J. Phys. Chem.*, 86: 5052-5067.
- KENT, C. y WONG, J. 1982. An index of littoral zone complexity and its measurement. *Can. J. Fish. Aquat. Sci.*, 39: 847-853.
- KERFOOT, W. C. 1974. Net accumulation rate and the history of Cladocera communities. *Ecology*, 55: 51-61.
- KERNER, E. H. 1959. Further considerations on the statistical mechanics of biological associations. *Bull. Math. Biophys.*, 21: 217-255.
- KHINCHIN, A. I. 1957. *Mathematical foundations of information theory*. Dover Publ., New York, 120 pp.
- KIERSTEAD, H., y SLOBODKIN, L. B. 1953. The size of water masses containing plankton blooms. *J. Mar. Res.*, 12: 141-147.
- KILKSON, R. 1964. Biological structure. *Proc. Nat. Acad. Sci.*, 51(4): 543-550.
- KIMURA, M. 1968. Evolutionary rate at the molecular level. *Nature*, 217: 624.
- KING, G. A. M. 1986. Was there a prebiotic soup? *J. theor. Biol.*, 123: 493-498.
- KINGSOLVER, J. G., y KOEHL, M. A. R. 1985. Aerodynamics, thermoregulation and the evolution of insect wings: Differential scaling and evolutionary change. *Evolution*, 39: 488-504.
- KLEIN, G. 1988. Ecodynamic changes in suburban lakes in Berlin during the restoration process after phosphate removal. In *Ecodynamics. Contributions to theoretical Ecology*, edit. W. Wlf, C.-J. Soeder i F. R. Drepper. Springer Verlag, pp. 138-145.
- KOLMOGOROV, A. N. 1941. The local structure of turbulence in incompressible viscous fluid for very large Reynolds numbers. *C. R. Acad. Sc. U.R.S.S.*, 30: 299-303.
- KOPELMAN, R. 1988. Fractal reaction kinetics. *Science*, 241: 1620-1626.
- KRUMMEL, J. R., GARDNER, R. H., SUGIHARA, G., O'NEIL, R. V., y COLEMAN, P. R. 1987. Landscape patterns in a disturbed environment. *Oikos*, 48: 321-324.
- KUHLMANN, H. W., y HECKMANN, K. 1985. Interspecific morphogens regulating prey-predator relationships in protozoa. *Science*, 227: 1347-1349.
- KUPPERS, M. 1987. Hecken. Ein Modellfall

- für die Partnerschaft von Physiologie und Morphologie bei der pflanzlichen Produktion in Konkurrenzsituationen. *Naturwissenschaften*, 74: 536-547.
- KURTÉN, B. 1968. *Pleistocene mammals of Europe*. Weidenfeld and Nicholson, London.
- LA MARCHE, V. C., GRAYBILL, D. A., FRITTS, H. C., y ROSE, M. R. 1984. Increasing atmospheric carbon dioxide: tree rings evidence for growth enhancement in natural vegetation. *Science*, 225: 1019-1021.
- LANDAUER, R. 1988. Dissipation and noise immunity in computation and communication. *Nature*, 335: 779-784.
- LANE, P. A. 1986. Symmetry, change, perturbation, and observing mode in natural communities. *Ecology*, 67: 223-239.
- LANE, P. A., y BLOUIN, A. C. 1974. Plankton of an acid-stressed lake: 3. Community network analysis. *Verh. intern. Verein Limnol.*, 22: 406-411.
- LANE, P. A., y COLLINS, T. M. 1985. Food web models of a marine plankton community: An experimental mesocosm approach. *J. Exp. Mar. Biol. Ecol.*, 94: 41-7.
- LANGE, G. D., y HURLEY, A. C. 1975. A theoretical treatment of unstructured food-webs. *Fishery Bull.*, 73: 378-381.
- LA SALLE, J. P., y LEFSCHATZ, S. 1961. *Stability by Liapunov's direct method*. Academic Press, New York.
- LAUVIGNE, D. M. 1982. Similarity in energy budgets of animal populations. *J. Anim. Ecol.*, 51: 195-206.
- LAZIER, J. R. N., y MANN, K. H. 1989. Turbulence and the diffusive layers around small organisms. *Deep-Sea Res.*, 36: 1721-1733.
- LECOMTE DE NOUY, P. 1936. *Le temps et la vie*. Gallimard, Paris, 168 pp.
- LE DANOIS, E. 1925. Remarques générales sur les transgressions atlantiques. *Cons. P. Int. E. Mar., Rapp. Proc. Verb. Réunion.*, 35: 5-11.
- LE DANOIS, E. 1943. Les transgressions océaniques. *Rev. Trav. Off. Pêches Marit.*, 7: 369-459.
- VAN LEEUWEN, C. G. 1966. A relational theoretical approach to pattern and processes in vegetation. *Wentia*, 15: 25-46.
- LEGENDRE, L., y DEMERS, S. 1985. Auxiliary energy, ergoclines and aquatic biological production. *Naturaliste Canadien (Rev. Ecol. Syst.)*, 112: 5-14.
- LEGENDRE, L., y LEGENDRE, P. 1983. *Numerical Ecology*. Elsevier Publ. Co., Amsterdam, Oxford, New York, 419 pp.

LEIN, A. Y. 1984. Anaerobic consumption of organic matter in modern marine sediments. *Nature*, 312: 148-150.

LETT, P. F., y KOHLER, A. C. 1976. Recruitment: A problem of multispecies interactions and environmental perturbations with special reference to Gulf of St. Lawrence Atlantic herring (*Clupea harengus harengus*). *J. Fish. Res. Bd. Canada*, 33: 1353-1371.

LEVASSEUR, M., THERRIault, J. C., y LE GENDRE, L. 1984. Hierarchical control of phytoplankton succession by physical factors. *Mar. Ecol. Progr. Ser.*, 19: 211-222.

LEVIN, S. A. 1976. Alkaloid-bearing plants: An ecogeographic perspective. *Amer. Natur.*, 110: 261-284.

LEVIN, S. A. 1977. A more functional response to predator-prey stability. *Amer. Natur.*, 110: 261-383.

LEVIN, S. A., y PAINE, R. T. 1974. Disturbance, patch formation, and community structure. *Proc. Natl. Acad. Sci. USA*, 71: 2744-2747.

LEVIN, S. A., y SEGEL, L. A. 1976. Hypothesis for origin of planktonic patchiness. *Nature*, 259: 659.

LEVINS, R. 1968. *Evolution in changing environments. Some theoretical explorations*. Princeton Univ. Press, Princeton. N. J., 120 pp.

LEVINTON, J. 1988. *Genetics, Paleontology and Macroevolution*. Cambridge Univ. Press, 637 pp.

LEWIN, S. 1974. *Displacement of water and its control of biochemical reactions*. Academic Press, London & New York, 367 pp.

LEWONTIN, R. C. 1974. *The genetic basis of evolutionary change*. Columbia Univ. Press, New York.

LIAPUNOV, M. A. 1907 (Traducido del ruso; publ. original, 1892). Problème général de la stabilité du mouvement. *Annales de Toulouse*, 9(2): 202-474. También en *Annals Mathem. Study*, 17. Princeton Univ. Press, 1949.

LIETH, H., y BOX, E. O. 1972. Evaporation and primary productivity. *C. W. Thornthwaite Memor. M. Publ. Climatology*, 25: 37-46. Elmer, N. J.

LIETH, H., y WHITTAKER, R. H. (edits.) 1975. *Primary productivity of the Biosphere*. Springer, New York, 339 pp.

LIN, I., y KAHN, P. B. 1978. Qualitative dynamics of three species predator-prey systems. *J. Mathem. Biol.*, 5: 257-268.

LITTLER, M. M., y LITTLER, D. S. 1983. Heteromorphic life-history strategies in the brown

alga *Scytosiphon lomentaria*. *J. Phycol.*, 19: 425-431.

LITTLER, M. M., LITTLER, D. S., BLAIR, S. M., y NORRIS, J. N. 1985. Deepest known plant life discovered on an uncharted seamount. *Science*, 227: 57-59.

LLOYD, M., y GHELARDI, R. J. 1964. A table for calculating the equitability component of species diversity. *J. Animal Ecol.*, 33: 217-225.

LOEBLICH, A. R., SCHMIDT, R. J., y SHERLEY, J. L. 1981. Scanning electron microscopy of *Heterocapsa pygmaea* n. sp. and evidence for polyploidy as a speciation mechanism in dinoflagellates. *J. Plankton res.*, 3: 67-79.

LONSDALE, W. M., y WATKINSON, A. R., 1983. Plant geometry and self-thinning. *J. Ecol.*, 71: 285-297.

LOTKA, A. J. 1925. *Elements of Physical Biology*. Williams and Wilkins, Baltimore (reimpr. 1956, bajo el título de *Elements of Mathematical Biology*. Dover Publ., New York, 465 pp.)

LOVELOCK, J. E. 1979. *Gaia. A new look at life on Earth*. Oxford Univ. Press, 157 pp.

LOVEJOY, S. 1982. Area-perimeter relation for rain and cloud areas. *Science*, 216: 185-187.

LUDWIG, D., JONES, D. D., y HOLLING, C. S. 1978. Quantitative analysis of insect outbreak systems: The spruce budworm and forest. *J. Anim. Ecol.*, 47: 315-332.

LUGO, A. E., y BROWN, S. 1986. Steady state terrestrial ecosystems and the global carbon cycle. *Vegetatio*, 68: 83-90.

LURIE, D., VALLS, J., y WAGENSBERG, J. 1983. Thermodynamic approach to biomass distribution in ecological systems. *Bull. Math. Biol.*, 45: 869-872.

LURIÉ, D., y WAGENSBERG, J. 1984. An extremal principle for biomass diversity in Ecology. In *Thermodynamic and regulation of biological processes*, edit. I. Lamprecht and A. I. Zotin. Walter de Gruyter & Co. Berlin, pp. 259-273.

MACARTHUR, R. H., y WILSON, E. O. 1967. *The theory of island biogeography*. Princeton Univ. Press, Princeton, N. J.

MACDONALD, N. 1983. *Trees and networks in biological models*. John Wiley and Sons, Chichester, 215 pp.

MCKINNEY, M. L. (edit.) 1988. *Heterochrony in Evolution. A multidisciplinary approach*. Plenum Press, New York & London, 348 pp.

MCLAREN, I. A. 1963. Effects of temperature on growth of zooplankton and the adaptive value of vertical migration. *J. Fish. Res. Bd. Canada*, 20: 685-727.

MENAB, B. K. 1980. Food habits, energetics,

and the population biology of animals. *Amer. Natur.*, 116: 106-124.

MENAB, B. K. 1988. Complications inherent in scaling the basal rate of metabolism in mammals. *Quart. Rev. Biol.*, 63: 25-54.

MENAB, S. J. 1976. Serengeti migratory wildebeest: Facilitation of energy flow by grazing. *Science*, 191: 92-94.

MENAB, S. J. 1978. Stability and diversity of ecological communities. *Nature*, 274: 252-253.

MENAB, S. J. Grassland-herbivore dynamics. In *Serengeti-Dynamics of an Ecosystem*, edit. A. Sinclair and M. Norton-Griffiths, Univ. Chicago Press, pp. 46-81.

MENAB, S. J., OESTERHELD, M., FRANCK, D. A., y WILLIAMS, K. J. 1989. Ecosystem-levels patterns of primary productivity and herbivory in terrestrial habitats. *Nature*, 341: 142-144.

MAILOT, F. E., y DUBOIS, D. M. 1974. Basic criteria in Cybernetics: Communication and organization. In *Advances in Cybernetics and Systems Research*. Proceed. of the European Meeting. Transcripta Books, Wien.

MANDELBROT, B. 1953. Contribution à la théorie mathématique des jeux de communication. *Publ. Inst. Univ. Paris*, 2: 80-102.

MANDELBROT, B. 1977. *Fractals. Form, chance, and dimension*. W. H. Freedman and Co., San Francisco, 365 pp.

MANDELBROT, B. 1983. *The fractal geometry of nature. Updated and augmented*. Freeman and Co., New York, 468 pp.

MANGEL, M. 1990. Dynamic information in uncertain and changing worlds. *J. theoret. Biol.*, 146: 317-332.

MARGALEF, R. 1953. Estudios experimentales sobre las modificaciones inducidas por diferentes temperaturas en células de clorofíceas. *P. Inst. Biol. Apl.* (Barcelona), 12: 5-78.

MARGALEF, R. 1959. Mode of evolution of species in relation to their places in ecological succession. *XV Intern. Congress Zool.*, sect. X, pap. 17, London.

MARGALEF, R. 1968. *Perspectives in ecological theory*. Univ. Chicago Press, 111 pp.

MARGALEF, R. 1973. Ecological theory and prediction in the study of interaction between man and the rest of the biosphere. In *Ökologie und Lebensschutz in internationaler Sicht*, edit. H. Sioli, Rombach, Freiburg. pp. 307-353.

MARGALEF, R. 1974. *Ecología*. Omega, Barcelona, 951 pp.

MARGALEF, R. 1975. External factors and

ecosystem stability. *Schweiz. Z. Hydrol.*, 37: 102-117.

MARGALEF, R. 1978. Life-forms of phytoplankton as survival alternatives in an unstable environment. *Oceanologica Acta*, 1: 493-510.

MARGALEF, R. 1980. *La Biosfera entre la termodinámica y el juego*. Omega, Barcelona, 236 pp.

MARGALEF, R. 1983. *Limnología*. Omega, Barcelona, 1010 pp.

MARGALEF, R. 1985. Environmental control of the mesoscale distribution of primary producers and its bearing to primary production in the Western Mediterranean. In *Mediterranean Marine Ecosystems*, edits. M. Moraitou-Apostolopoulou and V. Kiortsis, Plenum Press, New York and London, pp. 213-229.

MARGALEF, R. 1988. La relación entre la producción reciclada y la producción nueva en sistemas planctónicos. *Prospectiva de Oceanografía*, CSIC, Madrid, pp. 49-54.

MARGALEF, R., y GUTIÉRREZ, E. 1983. How to introduce connectance in the frame of an expression for diversity. *Amer. Natur.*, 121: 601-607.

MARRASÉ, C. 1986. *Experimentos multifactoriales con plancton marino en microcosmos*. Tesis Doctoral, Univ. Barcelona, 160 pp.

MARTIN, J. H., y FITZWATER, S. E. 1988. Iron deficiency limits phytoplankton growth in the north-east Pacific Subarctic. *Nature*, 331: 341-343.

MATSUNO, K. 1978. Evolution of dissipative system: A theoretical basis of Margalef's principle on ecosystem. *J. theor. Biol.*, 70: 23-31.

MATSUNO, K. 1984. In *Beyond Neo-Darwinism: An introduction to the new evolutionary paradigm*, edit. Mae-Wan ho and P. T. Saunders. Academic Press, Orlando, Florida, p. 83.

MATTHEW, W. D. 1915. Climate and evolution. *Ann. N. Y. Acad. Sci.*, 24: 171-318.

MATURANA, H. R. y VARELA, F. J. 1980. *Autopoiesis and Cognition. The realization of the living*. D. Reidel Publ. Co., Dordrecht, Holland, 141 pp.

MAY, R. 1972. Will a large complex system be stable? *Nature*, 238: 413-414.

MAY, R. M. 1975. Deterministic models with chaotic dynamics. *Nature*, 256: 165-166.

MAY, R. M., y MACARTHUR, R. N. 1972. Niche overlap as a function of environmental variability. *Proc. Natl. Acad. Sci.*, 69: 1109-1113.

MAYER, W. 1971. Gruppenverhalten von Totenkopffaffen unter besonderer Berücksichtigung der Kommunikationstheorie. *Kybernetik*, 8: 59-68.

- MAYNARD SMITH, J. 1982. *Evolution now*. Macmillan Press and V. H. Freeman.
- MAYR, E. 1942. *Systematics and the Origin of Species*. Columbia Univ. Press, New York.
- MAYR, E. 1970. *The growth of biological thought*. Harvard Univ. Press, Cambridge, Mass.
- MELOTT, A. L., y SHANDARIN, S. F. 1990. Generation of large-scale cosmological structures by gravitational clustering. *Nature*, 346: 633-635.
- MICHOD, R. E. 1981. Positive heuristics in evolutionary biology. *British J. Philos. Sc.*, 32: 1-36.
- MILLER, R. F., EDDLEMAN, L. E., y ANGELL, R. F. 1987. Relationship of Western Juniper stem conducting tissue and basal circumference to leaf area and biomass. *Great Basin Naturalist*, 47: 349-354.
- MILTON, K., y MAY, M. L. 1975. Body weight, diet and home range in primates. *Nature*, 259: 459-462.
- MÖBIUS, K. 1877. *Die Auster und die Austerwirtschaft*. Berlin.
- MOFFET, J. W., y ZAFIRIOU, O. C. 1990. An investigation on hydrogen peroxide chemistry in surface waters of Vineyard Sound. *Limnol. Oceanogr.*, 35: 1221-1229.
- MONTERRAT, P. 1971. La vejez del pasto. *Melhoramento* (Elvas), 21: 229-247.
- MONTERRAT, P. 1981. El césped y su dinamismo. *Studia Oecologica* (Salamanca), 1: 13-24.
- MOORE, P. M. 1976. Competition and sexual dimorphism in plants. *Nature*, 263: 73).
- MOORHEAD, P. S., y KAPLAN, M. M. (eds.) 1967. *Mathematical challenges to the Neo-Darwinian interpretation of Evolution*. A Symposium held in 1966. The Wistar Inst. Press, Philadelphia, 140 pp.
- MOROWITZ, H. J. 1968. *Energy flow in biology: Biological organization as a problem in thermal physics*. Academic Press, New York.
- MOTTEN, A. F. 1986. Pollination ecology of the spring wildflower community of a temperate deciduous forest. *Ecol. Monogr.*, 56: 21-42.
- MORSE, D. R., LAWTON, J. H., DODSON, M. M., y WILLIAMSON, M. H. 1985. Fractal dimensions of vegetation and the distribution of arthropod body lengths. *Nature*, 314: 731-733.
- NATHANSOHN, A. 1906. Sur l'influence de la circulation verticale des eaux sur la production du plancton marin. *Bull. Mus. Océanogr. Monaco*, 622: 1-12.
- NEEDHAM, A. E. 1959. The origination of life. *Quart. Rev. Biol.*, 34: 189-209.
- NELSON, G., y ROSEN, D. E. (eds.) 1981. *Vicariance Biogeography. A critique*. Papers from a Symposium. Columbia Univ. Press., New York, 594 pp.
- VON NEUMANN, J., y MORGENSTERN, O. 1953. *Theory of games and economic behavior*. Princeton Univ. Press, Princeton, N. J., 641 pp.
- NICOLIS, G., y PRIGOGINE, I. 1977. *Self-organization in non-equilibrium systems: from dissipative structures to order through fluctuations*. John Wiley and Sons, New York, 491 pp.
- NIKLAS, K. L. 1985. Wind pollination. A study in controlled chaos. *Amer. Scient.*, 73: 462-470.
- NORGAARD, R. B. 1987. Economics as mechanics and the demise of biological diversity. *Ecol. Modelling*, 38: 107-121.
- ODUM, E. P. 1969. Strategy of ecosystems development. *Science*, 164: 262-269.
- ODUM, H. T. 1983. Maximum power and efficiency: a rebuttal. *Ecol. Modelling*, 20: 71-82.
- ODUM, H. T. 1983b. *Systems Ecology: An introduction*. John Wiley and Sons, New York, 644 pp.
- ODUM, H. T. 1986. Emergy in Ecosystems. In *Ecosystem theory and application*, edit. N. Polunin. John Wiley and Sons, Ltd., pp. 337-369.
- ODUM, H. T., y ODUM, E. C. 1976 (2nd edit. 1981). *Energy basis for man and nature*. McGraw-Hill Book Co., New York, 296 pp. (2nd edit., 337 pp.).
- O'GRADY, R. T. 1985. The phylogenetics of parasitic flatworm life cycles. *Cladistics*, 1: 157-170.
- OKUBO, A. 1980. *Diffusion and ecological problems: mathematical models*. Springer Verlag, New York, Heidelberg, 254 pp.
- OHTONEN, R. 1982. Mineral concentrations in some edible fungi and their relations to fruit-body size and mineral status of substrate. *Ann. Bot. Fennici*, 19: 203-209.
- OREN, R.; WERK, K. S., y SCHULZE, E.-D. 1986. Relationships between foliage and conducting xylem in *Picea abies*. *Trees*, 1: 61-69.
- ORIANI, G. H. 1975. Diversity, stability and maturity in natural ecosystems. In *Unifying concepts in Ecology*, edit. van Dobben and Lowe-McConnell. Junk, The Hague; Pudoc, Wageningen, pp. 139-150.
- ORLÓCI, L. 1988. Community organization: recent advances in numerical methods. *Can. J. Bot.*, 66.
- ORTOLEVA, P. (edit.) 1990. Self-organization in Geological Systems. *Earth-Science Reviews*, 29: 1-401.
- OSTLER, W. K., y HARPER, K. T. 1978. Flo-

- ral ecology in relation to plant species diversity in the Wasatch mountains of Utah and Idaho. *Ecology*, 59: 848-861.
- OWEN, D. E., y OWEN, J. 1974. Species diversity in temperate and tropical Ichneumonidae. *Nature*, 249: 583-584.
- OWEN, D., y WIEGERT, R. G. 1976. Do consumers maximize plant fitness? *Oikos*, 27: 488-492.
- OWEN-SMITH, R. N. 1988. *Megaherbivores. The influence of very large body size on ecology*. Cambridge Univ. Press, Cambridge, etc., 369 pp.
- PAINE, R. T. 1974. Intertidal community structure: experimental studies on the relationship between a dominant competitor and its principal predator. *Oecologia*, 15: 93-120.
- PALENIK, B., y MOREL, F. M. M. 1988. Dark production of H₂O₂ in the Sargasso Sea. *Limnol. Oceanogr.*, 33: 1606-1611.
- PARSONS, T. R. 1969. The use of particle size spectra in determining the structure of a plankton community. *J. Oceanogr. Soc. Japan*, 25: 172-181.
- PARSONS, P. A. 1983. *The evolutionary biology of colonizing species*. Cambridge Univ. Press, 262 pp.
- PATTEN, B. C. 1961. Competitive exclusion. *Science*, 134: 1599-1601.
- PATTEN, B. C. 1982. Indirect causality in ecosystems: its significance for environmental protection. In *Research on fish and wildlife habitat*, edit. W. T. Mason and S. Iker, U.S. Environm. Agency.
- PATTEN, B. C., BOSSERMAN, R. W., FINN, J. T., y CALE, W. G. 1976. Propagation of cause in ecosystems. *Systems Analysis and Simulation in Ecology*, 4: 457-579. Academic Press.
- PATTON, D. C., y CARPENTER, F. L. 1984. Peripheral foraging by territorial rufous hummingbirds. Defense by exploitation. *Ecology*, 65: 1808-1819.
- PEINERT, R., SAURE, A., STEGMAN, P., STIENEN, C., HAARDT, H., y SMETACEK, V. 1982. Dynamics of primary production and sedimentation in a coastal ecosystem. *Neth. J. Sea Res.*, 16: 276-289.
- PEITGEN, H.-O., y SAUPE, D. (edit.) 1988. *The Science of Fractal Images*. Springer-Verlag, New York, etc., 312 pp.
- PEÑUELAS, J. 1987. High oxygen tension inhibits vascular aquatic plant growth in deep waters. *Photosynthetica*, 21: 494-502.
- PETERS, R. H. 1983. *The ecological implications of body size*. Cambridge Univ. Press, New York, 329 pp.
- PHILANDER, S. G. 1990. *El Niño, La Niña, and the Southern Oscillation*. Academic Press, San Diego, etc., 289 pp.
- PIANKA, E. R. 1970. On r- and K- selection. *Amer. Natur.*, 104: 592-597.
- PIELOU, E. C. 1975. *Ecological Diversity*. Wiley Intersc. Publ., John Wiley, New York, etc., 165 pp.
- PIMENTEL, D., y PIMENTEL, M. 1979. *Food, energy and society*. E. Arnold, London, 165 pp.
- PIMM, S. L. 1984. The complexity and stability of ecosystems. *Nature*, 307: 321-326.
- PIMM, S. L., y LAWTON, J. H. 1977. Number of trophic levels in ecological communities. *Nature*, 268: 329-331.
- PLATT, T. 1978. Spectral analysis of spatial structure in phytoplankton populations. In *Spatial pattern in plankton communities*, edit. J. H. Steele. Plenum Press, New York and London, pp. 73-84.
- PLATT, T., y RAO, D. V. S. 1970. Energy flow and species diversity in a marine phytoplankton bloom. *Nature*, 1059-1060.
- POST, W. M., y colabs. 1982. *Nature*, 289: 156-159.
- POSTON, T. y STEWART, I. 1978. *Catastrophe Theory and its Applications*. Pitman, London, San Francisco, Melbourne, 491 pp.
- POWELL, J. R. 1974. Temperature related genetic divergence in *Drosophila* body size. *J. Hered.*, 65: 257-258.
- POWELL, M. A., y SOMERO, G. N. 1986. Hydrogen sulfide oxydation is coupled to oxidative phosphorylation in mitochondria of *Solemya reichi*. *Science*, 233: 563-566.
- POWELL, T., y RICHERSON, P. J. 1985. Temporal variation, spatial heterogeneity, and competition for resources in plankton systems: A theoretical model. *Amer. Natur.*, 125: 431-464.
- PRAIRIE, Y. T., DUARTE, C. M., y KALFF, J. 1989. Unifying nutrient-chlorophyll relationships in lakes. *Canad. J. Fish. Aquat. Sci.*, 46: 1176-1182.
- PRIGOGINE, I., ALLEN, P., y HERMAN, R. 1977. The evolution of complexity and the laws of nature. In *Goals in a global community*. A report to the Club of Rome, edit E. Laszlo and J. Bierman, pp. 5-63.
- PRIGOGINE, I., y HERMAN, R. 1971. *Kinetic theory of vehicular traffic*. American Elsevier Publ. Co., New York, 100 pp.
- PRIGOGINE, I. y WIAME, J. M. 1946. Biologie et thermodynamique des phénomènes irréversibles. *Experientia*, 2: 451-453.

PROBERT, P. K. 1984. Disturbance, sediment stability, and trophic structure of soft-bottom communities. *J. Mar. Res.*, 42: 893-921.

PROTHERO, J. 1986. Methodological aspects of scaling in biology. *J. Theor. Biol.*, 118: 259-286.

PROVASOLI, L., YAMASI, T., y MANTON, I. 1968. *J. Mar. Biol. Assoc. U. K.*, 48: 465-479.

PUCCIA, C. J., y LEVINS, R. 1985. *Qualitative modeling of complex systems: An introduction to loop analysis and time averaging*. Harvard Univ. Press, Cambridge, Mass.

PURCELL, J. R. 1980. Influence of siphonophore behavior upon their natural diets: Evidence for aggressive mimicry. *Science*, 209: 1045-1047.

RAPOPORT, A. 1970. *N-Person Game Theory. Concepts and applications*. Univ. Michigan Press, Ann Arbor, 331 pp.

RÄSÄNEN, M. E., SALO, J. S., y KALLIOLA, R. J. 1988. Fluvial perturbation in the Western Amazon Basin: Regulation by long-term Sub-Andean Tectonics. *Science*, 238: 1398-1401.

REJIMÁNEK, M., y STARY, P. 1979. Connection in real biotic communities and critical values for stability of model ecosystems. *Nature*, 280: 311-313.

RICHERSON, P. J., y BOYD, R. 1990. Fets per la velocitat, no per al confort. La teoria darwiniana i la cultura humana. *Poblacions, societat i entorn*, pp. 57-101. Institut Humanitats — Barcelona, Barcelona.

RIDLEY, M. 1986. *Evolution and Classification. The reformation of Cladism*. Longman, London and New York, 201 pp.

RIERA, T., y ESTRADA, M. 1985. Dimensions and allometry in *Tropocyclops prasinus*. Empirical relationship with environmental temperature. *Verh. Internat. Verein Limnol.*, 22: 3159-3163.

RILEY, G. A., STOMMEL, H., y BUMPUS, D. F. 1949. Quantitative ecology of the plankton of the Western-North Atlantic. *Bull. Bingham Ocea. Coll.*, 12: 1-69.

RODRÍGUEZ, J., y MULLIN, M. M. 1986. Diel and interannual variation of size distribution of oceanic zooplanktonic biomass. *Ecology*, 67: 215-222.

ROGERS, R., y HINCKLEY, T. M. 1979. Foliar weight and area related to current sapwood area in oak. *Forest Sci.*, 25: 298-303.

ROMANKEVICH, E. A. 1984. *Geochemistry of organic matter in the oceans*. Springer Verlag, Berlin, 334 pp.

ROSA, D. 1918. *Ologenesi*. Bemporad, Firenze, 305 pp.

ROSE, F. 1976. Lichenological indicators of age and environmental continuity in woodlands. In *Lichenology: Progress and Problems*, edit. D. H. Brown, D. L. Hawksworth, and R. H. Bailey. Academic Press, London and New York, pp. 279-307.

ROSEN, R. 1985. Organisms as causal systems which are not mechanisms. An essay into the nature of complexity. In *Theoretical biology and complexity*, edit. Rosen. Academic Press, pp. 165-204.

ROSEN, R. 1989. Similitude, similarity, and scaling. *Landscape ecology*, 3: 207-216.

ROSENZWEIG, M. L. 1975. On continental steady of species diversity. In *Ecology and Evolution of Communities*, edit. Dody and Diamond, Belknap Press, Cambridge, Mass., pp. 121-140.

ROTH, R. R. 1976. Spatial heterogeneity and bird species diversity. *Ecology*, 57: 773-782.

ROUGHGARDEN, J. 1975. Population dynamics in a stochastic environment: Spectral theory for the linearized N-species Lotka-Volterra competition equation. *Theor. Popul. Biol.*, 7: 1-12.

ROUGHGARDEN, J. D. 1977. Patchiness in the spatial distribution of a population caused by stochastic fluctuations in resources. *Oikos*, 29: 52-59.

ROUVRAY, D. H. 1986. Predicting chemistry from topology. *Scientific American*, sept. 1986, 36-43.

RYAN, M. J. 1985. *The Túngara frog. A study in sexual selection and communication*. Chicago Univ. Press, Chicago, 230 pp.

RYSZKOVSKI, L. 1982. Structure and function in the mammal community in an agricultural landscape. *Acta Zool. Fennica*, 169: 45-59.

SAGAN, C. 1975. Hoja suelta distribuida con *Coevolution Quarterly*.

SALE, P. F. 1978. Coexistence in coral reef fishes. A lottery for living space. *Env. Biol. Fish.*, 3: 85-102.

SALO, J., KALLIOLA, R., HÄKKINEN, I., MÄKINEN, Y., NIEMELÄ, P., PUHAKKA, M., y COLEY, P. D. 1986. River dynamics and the diversity of Amazon lowlands forest. *Nature*, 322: 254-258.

SALTHER, S. N. 1985. *Evolving hierarchical systems*. Columbia Univ. Press, New York, 343 pp.

SAMUELSON, P. A. 1976. Time symmetry and asymmetry in population and deterministic dy-

dynamic systems. *Theoret. Popul. Biol.*, 9: 82-122.

SARGENT, T. D., y OWEN, D. F. 1975. Apparent stability in hindwing diversity in samples of moths of varying species composition. *Oikos*, 26: 205-210.

SCHAEFFER, B. E. 1985. Gamma-ray Bursters. *Scientific American*, febr. 85: 40-46.

SCHAEFFER, W. M. 1981. Ecological abstraction: the consequences of reduced dimensionality in ecological models. *Ecol. Monogr.*, 51: 383-401.

SCHILDER, F. A. 1950. *Körpergrösse und Organanzahl der Organismen*. Hallische Monogr., Eissfeldt, Halle.

SCHINDLER, D. W. 1986. The significance of in-lake production of alkalinity. *Water, Air, Soil Pollution*, 30: 931-944.

SCHINDLER, D. W. 1988. Effect of acid rain on freshwater ecosystems. *Science*, 239: 149-157.

SCHINDLER, D. W., et al. 1990. Effects of climatic warming on Lakes of the Central Boreal Forest. *Science*, 250: 967-970.

SCHLANGER, S. O., y JENKYN, H. C. 1976. Cretaceous oceanic anoxic sediments: causes and consequences. *Geologie en Mijnbouw*, 55: 179-184.

SCHLESINGER, W. H. 1977. Carbon balance in terrestrial detritus. *Ann. Rev. Ecol. Syst.*, 8: 51-81.

SCHMALHAUSEN, I. I., 1949. *Factors of evolution*. The Blakiston Co., Philadelphia, Toronto, 327 pp.

SCHMIDT-NIELSEN, K. 1984. *Scaling. Why is animal size so important?* Cambridge Univ. Press, Cambridge, 241 pp.

SCHOPF, J. W. 1980. The origin of archean evolution of life. In *The primitive Earth revisited. A symposium*, edit. M. H. Hickman, Miami Univ. Press, pp. 94-103.

SCHRÖDINGER, E. 1935. Die gegenwärtige Situation in der Quantenmechanik. *Naturwissenschaften*, 23: 807-812, 823-828, 844-849.

SCHULTZ, J. C., y BALDWIN, I. T. 1982. Oak leaf quality declines in response to defoliation by gypsy moth larvae. *Science*, 217: 149-151.

SCUDO, F. M. 1971. Vito Volterra and theoretical ecology. *Theor. popul. Biol.*, 2: 1-23.

SEBENS, K. P., y DE RIEMER, K. 1977. Diel cycles expansion and contraction in coral reefs anthozoans. *Mar. Biol.*, 43: 247-256.

SEIP, K. L., SAS, H., y VERMIJ, S. 1990. The short term response to eutrophication abatement. *Aquatic Sciences*, 52/3: 199-220.

SESTÁK, Z. (edit.) 1985. *Photosynthesis du-*

ring leaf development. Dr. W. Junk Publ., Dordrecht-Boston-Lancaster.

SHANNON, C. I., y WEAVER, W. 1949 (reimpresión 1969). *The mathematical theory of communication*. Illinois Books, Urbana.

SIGURDSON, H. et al. 1991. Glass from the Cretaceous/Tertiary boundary in Haiti. *Nature*, 349: 482-487.

SIMBERLOFF, D. 1974. Equilibrium theory of biogeography and ecology. *A. Rev. Ecol. and Systematics*, 5: 161-182.

SIMBERLOFF, D., y WILSON, E. O. 1969. Experimental zoogeography of islands: the colonization of empty islands. *Ecology*, 50: 278-296.

SIMON, H. A. 1969. *The sciences of the artificial*. M.I.T. Press, Cambridge, 123 pp.

SIMPSON, E. H. 1949. Measurement of diversity. *Nature*, 163: 688.

SKELLAM, J. G. 1951. Random dispersal in theoretical populations. *Biometrika*, 38: 196-218.

SKUD, B. E. 1982. Dominance in fishes. The relation between environment and abundance. *Science*, 216: 144-149.

SLOBODKIN, L. B. 1961. *Growth and regulation of animal populations*. Holt, Rinehart and Wilson, New York.

SLOBODKIN, L. B. 1974. Comments from a biologist to a mathematician. In *Ecosystem analysis and prediction*, edit. S. A. Levin. Proc. SIAM-SIMS Conf. held at Alta, Utah, pp. 318-329.

SMITH, R. J., GERMAN, R. Z., y JUNGERS, W. L. 1986. Variability in biological similarity criteria. *J. theor. Biol.*, 118: 287-293.

VON SMOLUCHOWSKI, M. 1918. Versuch einer mathematischen Theorie der Koagulationskinetik kolloider Lösungen. *Zeitschrift f. physikk. Chemie*, 92: 129-168.

SNELL, J. K. A., y BROWN, J. K. 1978. Comparison of tree biomass estimators: dbh and sapwood area. *For. Sci.*, 24: 455-457.

SOKAL, R. R., et al., 1990. Genetics and language in European populations. *Amer. Nat.*, 135: 157-175.

SOUSA, W. P. 1984. The role of disturbance in natural communities. *Ann. Rev. Ecol. Syst.*, 15: 353-391.

SOUTHWICK, E. E. 1984. Photosynthate allocation to floral nectar: a neglected energy investment. *Ecology*, 65: 1775-1779.

SPIESBERGER, J. L., y FRISTRUP, K. M. 1990. Passive localization of calling animals and sensing of their acoustic environment using acoustic tomography. *Amer. Nat.*, 115: 107-153.

SPRUGEL, D. G. 1976. Dynamic structure of

wave-regenerated *Abies balsamea* forests in the Northern Eastern United States. *J. Ecol.*, 64: 889-911.

STAGER, K. 1987. Silent death from Cameron's Killer Lake. *Nat. Geogr. Magazine*, 172 (3): 404-420.

STEELE, J. H. 1985. A comparison of terrestrial and marine ecological systems. *Nature*, 313: 355-358.

STENSETH, N. C. 1979. Where have all the species gone? On the nature of extinction and the Red Queen hypothesis. *Oikos*, 33: 196-227.

STENSETH, N. C., y MAYNARD SMITH, J. 1984. Coevolution in ecosystems: Red Queen evolution or stasis? *Evolution*, 38: 870-880.

STRONG, D. R., SIMBERLOFF, D., ABELE, L. G., y THISTLE, A. B. (eds.) 1984. *Ecological communities: conceptual issues and the evidence*. Princeton Univ. Press, Princeton.

STUBBS, M. 1977. Density dependence in the life-cycles of animals and its importance in K- and r-strategies. *J. Anim. Ecol.*, 46: 677-688.

SUTHERLAND, J. P., y KARLSON, R. H. 1977. Development and stability of the fouling community at Beauford, North Carolina. *Ecol. Monogr.*, 47: 425-446.

SUTHERLAND, W. J. 1987. Cultural evolution. Why do animals specialize? *Nature*, 325: 483-484.

SVIREZHEV, Y. M., y LLOGOFET, D. O. 1983. *Stability of Biological Communities* (traducido de la edición rusa de 1978 por A. Voinov). MIR Publishers Moscow, 319 pp.

SWANSON, F. J. 1980. Geomorphology and Ecosystems. In *Forests: Fresh perspectives from ecosystem analysis*, edit. R. W. Waring. Proceed, 40th Annual Biol. Colloquium 1979, pp. 159-169.

SYVITSKI, J. P. B., BURRELL, D. C., y SKEI, J. M. 1986. *Fjords. Processes and Products*. Springer Verlag.

T.A.N.S.K.Y. 1976. Structure, stability and efficiency of ecosystem. In *Progress Theor. Biol.*, edit. Rosen and Snell, 4: 205-262. Academic Press.

TANSLEY, A. G. 1935. The use and abuse of vegetational concepts and terms. *Ecology*, 16:284-307.

TEGGART, F. J. 1925. *Theory of History*. Yale Univ. Press, New Haven.

TERÁS, I. 1985. Food plants and flower visits of bumblebees (*Bombus*, Hymenoptera) in Southern Finland. *Acta Zool. Fennica*, 179: 1-120.

THOM, R. 1968. Une théorie dynamique de la morphogénèse. In *Towards a Theoretical*

Biology, edit. C. H. Waddington. Edinburgh Univ. Press, Edinburgh, 1: 152-179.

THOMPSON, D. W. 1942. *On growth and form*. Cambridge Univ. Press, London, New York.

TIGER, L., y FOX, R. 1974. *The imperial animal*. Dell Publ. Co., Inc. New York, 366 pp.

TOULMIN, S. 1982. *The return to cosmology*. University of California Press, Berkeley, Los Angeles, London, 283 pp.

TULJAPURKAR, S. D., y SEMURA, J. S. 1975. Stability of Lotka-Volterra systems. *Nature*, 257: 388-389 (see also *Nature*, 264: 381, 1976).

TURING, A. M. 1936. On computable numbers, with an application to the Entscheidungsproblem. *Proceed. London Math. Soc.*, s. 2, 42: 230-265.

TURING, A. M. 1950. Computing machinery and intelligence. *Mind*, 59: 433-460.

TURVEY, M. T., SCHMIDT, R. C., ROSENBLUM, L. D., y P. N. KUGLER 1988. On the time allometry of coordinated rhythmic movements. *J. theor. Biol.*, 130: 285-325.

UHLMANN, D., CRAMER, F., y ARNDT, E. A. 1974. Step-forcing of laboratory-scale aquatic ecosystems as a means to test their responses and stability. *Intern. Congress Ecol.*, The Hague, 1974, 6 pp.

ULANOWICZ, R. E. 1986. *Growth and development. Ecosystems Phenomenology*. Springer Verlag.

VALENTINE, J. W. 1968. Climatic regulation of species diversification and extinction. *Bull. Geol. Soc. America*, 71: 273-276.

VALENTINE, J. W., y AYALA, F. 1975. Genetic variation in *Frieleia halli*, a deep-sea brachiopod. *Deep-Sea Res.*, 22: 37-44.

VAN VALEN, L. 1973. A new evolutionary law. *Evol. Theory*, 1: 1-30.

VELARDE, M. G. 1976. Hydrodynamic instabilities in isotropic fluids. In *Fluid dynamics*, edit. Balian and Peube. Procs. 1973 Les Houches Summer School. Gordon and Breach, New York, pp. 471-527.

VERMEIJ, G. J. 1987. *Evolution and escalation. An ecological History of life*. Princeton Univ. Press, Princeton, N. J., 527 pp.

VERNADSKY, W. I. 1929. *La Biosphère*. Alcan, Paris.

VOLOHONSKY, H. 1982. Free energy flow in the process of collecting material for body build up of aquatic organisms. *Ecol. Modelling*, 15: 313-329 (see also *Biennial report 1982-83 Israel Ocean. Limnol. Res.*, p. 47-48).

VOLOHONSKY, H. 1985. Form-building po-

tencies of photons and the structural dynamics of ecosystems. *Ecol. Model.*, 28: 139-154.

VOLOHONSKY, H. 1986. *Ecosystems memory in the context of structural dynamics*. Ecological Modelling, 33: 59-75.

VOLTERRA, V. 1926. Variazioni e fluttuazioni del numero d'individui in specie animali conviventi. *Mem. Accad. Lincei*, (6) 2: 31-113.

WAGENSBERG, J. 1976. *Balance energético y disipación entrópica en un cultivo bacteriano*. Tesis doctoral Universidad de Barcelona, 217 pp.

WAGENSBERG, J., GARCÍA, A., y SOLÉ, R. V. 1990. Connectivity and information transfer in flow networks: two magic numbers in ecology? *Bull. Math. Biol.*, 52: 733-740.

WAHLE, C. M. 1980. Detection, pursuit and overgrowth of tropical gorgonians by milleporids hydrocorals. *Science*, 209: 689-691.

WALKER, J. C. G. 1987. Was the Archaean biosphere upside down? *Nature*, 329: 710-712.

WALTER, C. 1975. The global asymptotic stability of prey-predator systems with second order dissipation. In *Membranes, dissipative structures and evolution*, edit. Nicolis and Lefever. Interscience, John Wiley, New York, pp. 125-131.

WANGERSKY, P. J. 1978. Lotka-Volterra population models. *Ann. Rev. Ecol. Syst.*, 9: 189-218.

WARING, A. H., GHOLZ, H. L., GRIER, C. C., y PLUMMER, H. L. 1977. Evaluating stem conducting tissue as an estimator of leaf area in four woody angiosperms. *Can. J. Bot.*, 55: 1474-1477.

WEBB, J. S., et al. 1978. *The Wolfson geochemical atlas of England and Wales*. Clarendon Press, Oxford, 14 pp + 67 maps.

WEBER, B. H., DEPEW, D. J., y SMITH, J. D. (eds.) 1988. *Entropy, Information and Evolution. New perspectives on physical and biological evolution*. The MIT Press, Cambridge, Mass., 376 pp.

WELLER, D. E. 1987a. Self-thinning exponent correlated with allometric measures of plant growth. *Ecology*, 68: 813-821.

WELLER, D. E. 1987b. A reevaluation of the -3/2 power rule of plant self-thinning. *Ecol. Monogr.*, 57: 23-43.

WESLEY, J. P. 1974. *Ecophysics. The application of Physics to Ecology*. Charles C. Thomas Publ., Springfield, Illinois, 340 pp.

WESTOBY, M. 1977. Self-thinning driven by leaf area not by weight. *Nature*, 265: 330.

WESTOBY, M., y HOWELL, J. 1981. Self-thinning: The effect of shading on glasshouse populations of silver beet. *J. Ecol.*, 69: 359-365.

WHITE, L. P. 1970. Brousse tigrée patterns in Southern Niger. *J. Ecol.*, 58: 549-553.

WHITTAKER, R. H., y GOODMAN, D. 1979. Classifying species according to their demographic strategy. I. Population fluctuations and environmental heterogeneity. *Amer. Natur.*, 113: 185-200.

WICKEN, J. S. 1983. Entropy, information, and non-equilibrium evolution. *Syst. Zool.*, 32: 438-443.

WIENS, J. A., CRAWFORD, C. S., y GOSZ, J. R. 1985. Boundary dynamics: a conceptual framework for studying landscape ecosystems. *Oikos*, 45: 421-427.

WILDE, P., y BERRY, W. B. N. 1982. Progressive ventilation of the Oceans. Potential for return to anoxic conditions in the Post-Paleozoic. In *Nature and origin of Cretaceous carbon-rich facies* (edit. Schlanger & Cita). Academic Press, 209-224.

WILLIAMS, T., y BJERKNES, R. 1972. Stochastic model for abnormal clone spread through epithelial basal layer. *Nature*, 236: 19-21.

WOLFRAM, S. 1984. Cellular automata as models of complexity. *Nature*, 311: 419-424.

WRÓBLEWSKI, J. S., y O'BRIEN, J. J. 1976. A spatial model of phytoplankton patchiness. *Mar. Biol.*, 35: 161-175.

YAMAKURA, T., HAGIHARA, A., SUKARDJO, S., y OGAWA, H. 1986. Above ground biomass of tropical rain forest stands in Indonesia Borneo. *Vegetatio*, 68: 71-82.

YENTSCH, Ch. S., y YENTSCH, C. M. 1979. Fluorescence spectral signatures. The characterization of phytoplankton populations by the use of excitation and emission spectra. *J. Mar. Res.*, 37: 471-483.

YODZIS, P. 1978. Environmental randomness and the tenacity of equilibria. *J. theor. Biol.*, 72: 185-189.

YODZIS, P. 1980. The connectance of real systems. *Nature*, 284: 544-545.

ZEHNDRER, A. J. B. 1982. The Carbon cycle. In *The Natural Environment and the biogeochemical Cycles*. Springer verlag, 1B, pp. 83-106.

ZIMMERMANN, M. H. 1971. Transport in the xylem. In *Trees, structure and function*, edit. M. H. Zimmermann and C. L. Brown, Springer Verlag, Berlin, Heidelberg, New York, pp. 169-220.

ZIPF, G. K. 1949. *Human Behavior and the principle of least effort*. Addison-Wesley Publ. Co., Cambridge, Mass.

ZUCKER, N. 1944. Shelter building as a

means of reducing territory size in the fidler crab *Uca thersichores*. *Amer. Midl. Natur.*, 91: 224-236.

ZUREK, W. H. 1989. Thermodynamic cost of computation, algorithmic complexity and the information metric. *Nature*, 341: 119-124.