

Zeitschrift: Archives des sciences et compte rendu des séances de la Société
Herausgeber: Société de Physique et d'Histoire Naturelle de Genève
Band: 42 (1989)
Heft: 1: Archives des Sciences

Artikel: Polarity : from dipoles to biopolarizations. III. Addenda
Autor: Turian, Gilbert
Bibliographie: References
DOI: <https://doi.org/10.5169/seals-740082>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. [Siehe Rechtliche Hinweise.](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. [Voir Informations légales.](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. [See Legal notice.](#)

Download PDF: 02.04.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

REFERENCES

- ABRAGAM, A. (1989). *Time Reversal. An Autobiography*. Clarendon, Oxford Univ. Press. 373 pp.
- ABRAGAM, A. and M. GOLDMAN (1978). Principles of dynamics nuclear polarisation. *Reports on Progress in Physics* 41: 395-446.
- ADAMS, A.E.M., D.I. JOHNSON, R.M. LONGNECKER, B.F. SLOAT and J.R. PRINGLE (1990). CDC42 and CDC43: Two additional genes involved in budding and the establishment of cell polarity in the yeast *Saccharomyces cerevisiae*. *J. Cell Biol.* 111: 131-142.
- AEBI, U., J. COHN, L. BUHLE and L. GERACE (1986a). The nuclear lamina is a meshwork of intermediate-type filaments. *Nature* 323: 560-564.
- AEBI, U., R. MILLONIG, H. SALVO and A. ENGEL (1986b). The three-dimensional structure of the actin filament revisited. *Ann. N.Y. Acad. Sci.* 483: 100-119.
- ALFA, E.C. and J.S. HYAMS (1990). Distribution of tubulin and actin through the cell division cycle of the fission yeast *Schizosaccharomyces japonicus* var. *versatilis*: a comparison with *Schizosaccharomyces pombe*. *J. Cell Sci.* 96: 71-77.
- ALIAGA, G.R. and J.C. POMMERVILLE (1990). Analysis of cytoplasmic microtubules and flagellar roots in the zoospores of *Allomyces macrogynus*. *Protoplasma* 155: 221-232.
- ALLEN, R.D., J. METUZALS, I. TASAKI, S.T. BRADY and S.P. GILBERT (1982). Fast axonal transport in squid giant axon. *Science* 218: 1127-1129.
- ANDELMAN, D., F. BROCHARD and J.-F. JOANNY (1987). Phase transitions in Langmuir monolayers of polar molecules. *J. Chem. Phys.* 86: 3673-3681.
- ANTHONY, C. (ed.) (1988). *Bacterial Energy Transduction*. Academic Press, London, New York. 517 pp.
- APPENZELLER, T. (1990). Gravitomagnetism. *The Sciences* Nov./Dec.: 7-8.
- ASADA, T., S. SONOBE and H. SHIBOAKA (1991). Microtubule translocation in the cytokinetic apparatus of cultured tobacco cells. *Nature* 350: 238-241.
- ASHBURN, P. (1988). *Design and Realization of Bipolar Transistors*. Wiley, Chichester. 198 pp.
- ATIYAH, M.F. and N.J. HITCHIN (1988). *The Geometry and Dynamics of Magnetic Monopoles*. Princeton Univ. Press, Princeton, New Jersey. 133 pp.
- ATTARD, P., J.D. MITCHELL and B.W. NINHAM (1988). *Biophys. J.* 53: 457-460. In Richetti *et al.*, 1990.
- BAAS, R.W., J.S. DEITCH, M.M. BLACK and G.A. BANKER (1988). Polarity orientation of microtubules in hippocampal neurons: uniformity in the axon and nonuniformity in the dendrite. *Proc. Natn. Acad. Sci. U.S.A.* 85: 8335-8339.
- BADOT, P.M., D. MELIN and J.P. GARREC (1990). Circumnutation in *Phaseolus vulgaris* II. Potassium content in the free-moving part of the shoot. *Plant Physiol. Biochem.* 28: 123-130.
- BAKER, K.P., A. SCHANIEL, D. VESTWEBER and G. SCHATZ (1990). A yeast mitochondrial outer membrane protein essential for protein import and cell viability. *Nature* 348: 605-609.
- BAKKER, E.P. and F.M. HAROLD (1980). In Harold and Kakinuma, 1985.
- BALDRACCHINI, F., N.S. CRAIGIE, V. ROBERTO and M. SOCOLOVSKY (1981). A survey of polarization asymmetries predicted by QCD. *Fortsch. Phys.* 30: 505-550.
- BANDURSKI, R.S., A. SCHULZE, P. DAYANANDAN and P.B. KAUFMAN (1984). Response to gravity by *Zea mays* seedlings. I. Time course of the response. *Plant Physiol.* 74: 284-288.
- BARTNIK, E. and A. SIEVERS (1988). *In vivo* observations of a spherical aggregate of endoplasmic reticulum and of Golgi vesicles in the tip of fast-growing *Chara* rhizoids. *Planta* 176: 1-9.
- BATES, F.S. (1991). Polymer-polymer phase behavior. *Science* 251: 898-905.
- BATES, F.S., G.D. WIGNALL and W.C. KOEHLER (1985). Critical behavior of binary liquid mixtures of deuterated and protonated polymers. *Phys. Rev. Lett.* 55: 2425-2428.
- BAUER, M.R. (1987). Studies on the detection of chemical and biological agents by triple quadrupole mass spectrometry. Thesis, Michigan State University.

- BAUMGARTNER, S. and M. NOLL (1991). Network of interactions among pair-rule genes regulating *paired* expression during primordial segmentation of *Drosophila*. *Mechan. Develop.* 33: 1-18.
- BEHRENS, H.M., D. GRADMANN and A. SIEVERS (1985). Membrane-potential responses following gravistimulation in roots of *Lepidium sativum* L. *Planta* 163: 463-472.
- BÉNY, J.-L. and F. GRIBI (1989). Dye and electrical coupling of endothelial cells *in situ*. *Tissue and Cell* 21: 797-802.
- BERRIDGE, M.J. (1987). Inositol trisphosphate as a second messenger in signal transduction. In *Third Colloquium in Biological Sciences: Cellular Signal Transduction*. F.L. Strand (ed.), *Ann. N.Y. Acad. Sci.* 494: 39-48.
- BERTRAND, F.E. (1976). Excitation of giant multipole resonances through inelastic scattering. *Ann. Rev. Nuclear Sci.* 26: 457-510.
- BERTRAND, F.E. (ed.) (1980). Giant Multipole Resonances. Nuclear Science Research Conference Series, vol. 1. Harwood Acad. Publ., Chur. 481 pp.
- BHATLA, S.C. and M. BOPP (1985). The hormonal regulation of protonema development in mosses III. Auxin-resistant mutants of the moss *Funaria hygrometrica* Hedw. *J. Plant Physiol.* 120: 233-243.
- BIGNOLD, L.P., S.D. ROGERS and D.G. HARKIN (1990). Effects of plasma proteins on the adhesion, spreading, polarization in suspension, random motility and chemotaxis of neutrophil leukocytes on polycarbonate (nucleopore) filtration membrane. *Eur. J. Cell Biol.* 53: 27-34.
- BIKLE, D., L.G. TILNEY and K.R. PORTER (1966). Microtubules and pigment migration in the melanophores of *Fundulus heteroclitus*. *Protoplasma* 61: 322-345.
- BLAIVE, B. (1980). Contribution à la théorie de la polarisation électrique et à l'étude des interactions électrostatiques des molécules d'un liquide. Thèse. Université d'Aix-Marseille III. 189 pp.
- BLASER, P.F., S. CATSICAS and P.G.H. CLARKE (1990). Retrograde modulation of dendritic geometry in the vertebrate brain during development. *Dev. Brain Res.* 57: 139-142.
- BLICHER, A. (1981). Field-Effect and Bipolar Power Transistor Physics. Academic Press, New York. 312 pp.
- BLOOR, D. (1988). Conducting-polymer electronics. *Nature* 335: 115-117.
- (1991). Totally organic transistors. *Nature* 349: 738-739.
- BOILLY, B. and Y. BOILLY-MARER (1972). Rôle des contacts tissulaires dans le déclenchement de la morphogenèse régénératrice chez la *Nereis*. *Bull. Soc. Zool. Fr.* 97: 295-309.
- BOILLY, B., E. LHEUREUX, Y. BOILLY-MARER and A. BART (1990). Cell interactions and regeneration control. *Int. J. Dev. Biol.* 34: 219-231.
- BOMSEL, M., R. PARTON, S.A. KUZNETSOV, T.A. SCHROER and J. GRUENBERG (1990). Microtubule- and motor-dependent fusion *in vitro* between apical and basolateral endocytic vesicles from MDCK cells. *Cell* 62: 719-731.
- BOPP, D., M. BURRI, S. BAUMGARTNER, G. FRIGERIO and M. NOLL (1986). Conservation of a large protein domain in the segmentation gene *paired* and functionally related genes of *Drosophila*. *Cell* 47: 1033-1040.
- BORISY, G.G. (1978). Polarity of microtubules of the mitotic spindle. *J. Mol. Biol.* 124: 565-570.
- BORST-PAUWELS, G.W.F.H., J.B.J. VAN DE MORTEL, D. MULDER, H. KORTHOUT and A.P.R. THEUENET (1988). Indications that the transient hyperpolarization of yeast by glucose at pH 7 is caused by opening of specific K⁺ channels. In *Proceedings of Contributions to the 6th Small Meeting on Yeast-Transport and Energetics*. Dortmund, FRG. Pp. 15-16. D. Kuschmitz (ed.), Max Planck Institut, Dortmund.
- BÖTTCHER, C.J.F., revised by O.C. VAN BELLE, P. BORDEWIJK and A. RIP (1973). Theory of Electric Polarization. Vol. 1. Dielectrics in Static Fields. 2nd ed. Elsevier, Amsterdam, London. 377 pp.
- BÖTTCHER, C.J.F. and P. BORDEWIJK (1978). Theory of Electric Polarization. Vol. 2. Dielectrics in Time-Dependent Fields. 2nd ed. Elsevier, Amsterdam, London. 551 pp.
- BOWMAN, J.L., D.R. SMYTH and E.M. MEYEROWITZ (1989). Genes directing flower development in *Arabidopsis*. *Plant Cell* 1: 37-52.

- BOY DE LA TOUR, E. and U.K. LAEMMLI (1988). The metaphase scaffold is helically folded: sister chromatids have predominantly opposite helical handedness. *Cell* 55: 937-944.
- BOYD, D. and J. BECKWITH (1990). The role of charged amino acids in the localization of secreted and membrane proteins. *Cell* 62: 1031-1033.
- BRANDSMA, L. and H.D. VERKRUIJSSE (1987). Preparative Polar Organometallic Chemistry. Vol. 1. Springer-Verlag, Berlin.
- BRAWLEY, S.H., D.F. WETHERELL and K.R. ROBINSON (1984). Electrical polarity in embryos of wild carrot precedes cotyledon differentiation. *Proc. Natn. Acad. Sci. U.S.A.* 81: 6064-6067.
- BROCKES, J. (1991). We may not have a morphogen. *Nature* 350: 15.
- BROWN, J.M. (1991). Synthesis with a strong hand. *Nature* 350: 191.
- BROWN, J.M. and S.G. DAVIES (1989). Chemical asymmetric synthesis. *Nature* 342: 631-636.
- BROWN, N.A. and L. WOLPERT (1990). The development of handedness in left/right asymmetry. *Development* 109: 1-9.
- BROWN, R.J.C., M.A. WHITEHEAD and W.J. ORVILLE-THOMAS (eds) (1983). Nuclear Quadrupole Resonance Spectroscopy. *J. Mol. Struct.* 111 (special issue). 432 pp.
- BRUMFELD, V. and I.R. MILLER (1990). Electric field dependence of alamethicin channels. *Biochim. Biophys. Acta* 1024: 49-53.
- BUCHEN, B., D. HENSEL and A. SIEVERS (1983). Polarity in mechanoreceptor cells of trigger hairs of *Dionaea muscipula* Ellis. *Planta* 158: 458-468.
- BURFOOT, J.C. and G.W. TAYLOR (1979). Polar Dielectrics and their Applications. Univ. of California Press, Berkeley. 465 pp.
- BURROUGHES, J.H., D.D.C. BRADLEY, A.R. BROWN, R.N. MARKS, K. MACKAY, R.H. FRIEND, P.L. BURNS and A.B. HOLMES (1990). Light-emitting diodes based on conjugated polymers. *Nature* 347: 539-541.
- BURTON, P.R. (1988). Dendrites of mitral cell neurons contain microtubules of opposite polarity. *Brain Res.* 473: 107-115.
- BURTON, R.R. and J.L. PAIGE (1981). Polarity of axoplasmic microtubules in the olfactory nerve of the frog. *Proc. Natn. Acad. Sci. U.S.A.* 78: 3269-3273.
- CABRERA, B. 1990. In M.E. HUBER *et al.* *Phys. Rev. Lett* (feb. 1990).
- CACACE, F. (1990). Nuclear decay techniques in ion chemistry. *Science* 250: 392-399.
- CANTINO, E.C., J.S. LOVETT, L.V. LEAK and J. LYTHGOE (1963). The single mitochondrion, fine structure and germination of the spores of *Blastocladia emersonii*. *J. Gen. Microbiol.* 31: 393-404.
- CARPENTER, A.T.C. (1991). Distributive segregation: motors in the polar wind? *Cell* 64: 885-890.
- CASSER, M., D. HODICK, B. BUCHEN and A. SIEVERS (1985). Correlation of excitability and bipolar arrangement of endoplasmic reticulum during the development of sensory cells in trigger hairs of *Dionaea muscipula* Ellis. *Ann. Meet. Belgian and German Soc. Cell Biol. Polarity - transport - skeleton. Eur. J. Cell Biol. Suppl.* 7 (vol. 36): 12.
- CASTLE, J.D., R.S. CAMERON, P. ARVAN, M. VON ZASTROW and G. RUDNICK (1987). Similarities and differences among neuroendocrine, exocrine and endocytic vesicles. In *Cellular and Molecular Biology of Hormone- and Neurotransmitter-Containing Secretory Vesicles*. R.G. Johnson (ed.), *Ann. N.Y. Acad. Sci.* 493: 448-460.
- CEREJIDO, M., A. PONCE and L. GONZALEZ-MARISCAL (1989). Tight junctions and apical/basolateral polarity. *J. Membrane. Biol.* 110: 1-9.
- CHENG, K.T., Y.-K. KIM and J.P. DESCLAUX (1979). Electric dipole, quadrupole, and magnetic dipole transition probabilities of ions isoelectronic to the first-row atoms, Li through F. *Atomic Data and Nuclear Data Tables* 24(2): 111-189.
- CHERFAS, J. (1990). Embryology gets down to the molecular level. *Science* 250: 33-34.
- CHIPMAN, R.A. (ed.) (1988). Polarization Considerations for Optical Systems. Proceedings of SPIE, the International Society for Optical Engineering. Vol. 891. Bellingham, Washington. 293 pp.

- CHIPMAN, R.A. (ed.) (1990). Polarization Considerations for Optical Systems II. Proceedings of SPIE, the International Society for Optical Engineering. Vol. 1166. Bellingham, Washington. 547 pp.
- CHO, C.-W., F.M. HAROLD and W.J.A. SCHREURS (1991a). Electric and ionic dimensions of apical growth in *Achlya* hyphae. *Exper. Mycol.* 15: 34-43.
- CHO, K.W.Y., E.A. MORITA, C.V.E. WRIGHT and E.M. DE ROBERTIS (1991b). Overexpression of a homeodomain protein confers axis-forming activity to uncommitted *Xenopus* embryonic cells. *Cell* 65: 55-64.
- CHOTHIA, C. and A.V. FINKELSTEIN (1990). The classification and origins of protein folding patterns. *Ann. Rev. Biochem.* 59: 1007-1039.
- CHUANG, I., R. DURRER, N. TUROK and B. YURKE (1991). Cosmology in the laboratory: defect dynamics in liquid crystals. *Science* 251: 1336-1342.
- CLARKE, P.G.H. and F. CARANZANO (1985). Dendritic development in the isthmo-optic nucleus of chick embryos. *Dev. Neurosci.* 7: 161-169.
- CLEGG, J.S. (1984). Intracellular water and the cytomatrix: some methods of study and current views. *J. Cell Biol.* 99: 167s-171s.
- CLOSE, F. (1991). Glueballs and exotic matter. *Nature* 349: 368-369.
- COUCHMAN, J.R. and D.A. REES (1982). Organelle-cytoskeleton relationships in fibroblasts: mitochondria, Golgi apparatus, and endoplasmic reticulum in phases of movement and growth. *Eur. J. Cell Biol.* 27: 47-54.
- COVENEY, P. and R. HIGHFIELD (1990). The Arrow of Time. Allen. 378 pp.
- CREUZET, F., A. MCDERMOTT, R. GEBHARD, K. VAN DER HOEF, M.B. SPIJKER-ASSINK, J. HERZFELD, J. LUGTENBURG, M.H. LEVITT and R.G. GRIFFIN (1991). Determination of membrane protein structure by rotational resonance NMR: bacteriorhodopsin. *Science* 251: 783-786.
- CROWE, A. and M.R.H. RUDGE (eds) (1988). Proceedings of the International Symposium on Correlation and Polarisation in Electronic and Atomic Collisions. Belfast, North Ireland. 352 pp.
- DAR, A. (1990). Astrophysics and cosmology closing in on neutrino masses. *Science* 250: 1529-1533.
- DASCALU, D. (1977). Electronic Processes in Unipolar Solid-State Devices. Abacus Press, Tunbridge Wells. Ed. Acad. Bucuresti. 624 pp.
- DAVIES, D.R., E.A. PADLAN and S. SHERIFF (1990). Antibody-antigen complexes. *Ann. Rev. Biochem.* 59: 439-473.
- DE CAMILLI, P., F. BENFENATI, F. VALTORTA and P. GREENGARD (1990). The synapsins. *Ann. Rev. Cell Biol.* 6: 433-460.
- DE ROBERTIS, E.M., G. OLIVER and C.V.E. WRIGHT (1990). Homeobox genes and the vertebrate body plan. *Sci. Amer.* 263(1): 26-32.
- DESBIEZ, M.-O. and M. THELLIER (1990). The *Bidens* plantlet: bilateral symmetry and possible breaking of the symmetry during bud growth. In *Intra-and Intercellular Communications in Plants. Reception - Transmission - Storage and Expression of Messages*. Pp. 141-150. B. Millet and H. Greppin (eds), INRA, Paris. 175 pp.
- DESHAIES, R.J. and R. SCHEKMAN (1990). Structural and functional dissection of *SEC62p*, a membrane-bound component of the yeast endoplasmic reticulum protein import machinery. *Mol. Cell. Biol.* 10: 6024-6035.
- DESHUSSES, J.P.M. (1985). Myo-inositol transport in bacteria: H⁺ symport and periplasmic binding protein dependence. In *Membrane Transport Driven by Ion Gradients*. G. Semenza and R. Kinne (eds), *Ann. N.Y. Acad. Sci.* 456: 351-360.
- DESHUSSES, J. and G. REBER (1977). In Deshusses, 1985.
- DEVREESE, J.T. and F. PEETERS (eds) (1982). Polarons and Excitons in Polar Semiconductors and Ionic Crystals. NATO ASI series; series B: Physics, vol. 108. Plenum Press, New York, London. 474 pp.
- DICKER, J.W. and G. TURIAN (1990). Calcium deficiencies and apical hyperbranching in wild-type and the "frost" and "spray" morphological mutants of *Neurospora crassa*. *J. Gen. Microbiol.* 136: 1413-1420.

- DICTUS, W.J.A., E.J.J. VAN ZOELLEN, P.A.T. TETTEROO, L.G.J. TERTOOLEN, S.W. DE LAAT and J.G. BLUEMINK (1984). Lateral mobility of plasma membrane lipids in *Xenopus* eggs: regional differences related to animal/vegetal polarity become extreme upon fertilization. *Develop. Biol.* 101: 201-211.
- DODDS, A.R. (1976). A parametric study of induced polarization models. CSIRO, Minerals Research Laboratories. North Ryde. 149 pp.
- DOE, C.Q. and C.S. GOODMAN (1985). Early events in insect neurogenesis. I. Development and segmental differences in pattern of neuronal precursor cells. *Dev. Biol.* 111: 193-205.
- DOONAN, J.H., D.J. COVE and C.W. LLOYD (1988). Microtubules and microfilaments in tip growth: evidence that microtubules impose polarity on protonemal growth in *Physcomitrella patens*. *J. Cell Sci.* 89: 533-540.
- DOTTI, C.G. and K. SIMONS (1990). Polarized sorting of viral glycoproteins to the axon and dendrites of hippocampal neurons in culture. *Cell* 62: 63-72.
- DOTTI, C.G., R.G. PARTON and K. SIMONS (1991). Polarized sorting of glypiated proteins in hippocampal neurons. *Nature* 349: 158-160.
- DRAKE, J.M., J. KLAFTER and P. LEVITZ (1991). Chemical and biological microstructures as probed by dynamic processes. *Science* 251: 1574-1579.
- DRENCKHAHN, D. and V. BENNETT (1987). Polarized distribution of M_r 210 000 and 190 000 analogs of erythrocyte ankyrin along the plasma membrane of transporting epithelia, neurons and photoreceptors. *Eur. J. Cell Biol.* 43: 479-486.
- DRIESCH, H. (1899). Die Lokalisation morphogenetischer Vorgänge. Ein Beweis vitalistischen Geschehens. *Arch. Entw. Mech.* 8: 35-111.
- DRIKS, A., P.V. SCHOENLEIN, D.J. DEROSIER, L. SHAPIRO and B. ELY (1990). A *Caulobacter* gene involved in polar morphogenesis. *J. Bacteriol.* 172: 2113-2123.
- EILAM, Y. and M. OTHMAN (1990). Activation of Ca^{2+} influx by metabolic substrates in *Saccharomyces cerevisiae*: role of membrane potential and cellular ATP levels. *J. Gen. Microbiol.* 136: 861-866.
- EISENBERG, R.C. and P.V. PHIBBS (1982). In Deshusses, 1985.
- EISENMAN, G. and O. ALVAREZ (1991). Structure and function of channels and channelogs as studied by computational chemistry. *J. Membr. Biol.* 119: 109-132.
- ENGEL, M.H., S.A. MACKO and J.A. SILFER (1990). Carbon isotope composition of individual amino acids in Murchison meteorite. *Nature* 348: 47-49.
- ENGSTROEM, S. (1980). On the interpretation of NMR spectra quadrupolar nuclei: quantum chemical and statistical mechanical calculations. Thesis. Univ. Lund.
- EPSTEIN, R.H., A. BOLLE, C.M. STEINBERG, E. KELLENBERGER, E. BOY DE LA TOUR, R. CHEVALLEY, R.S. EDGAR, M. SUSMAN, G.H. DENHARDT and A. LIELAUSIS (1963). Physiological studies of conditional lethal mutations of bacteriophage T4D. *Cold Spring Harbor Symp. Quant. Biol.* 28: 375-394.
- EVANS, M.L. (1991). Gravitropism: interaction of sensitivity modulation and effector redistribution. *Plant Physiol.* 95: 1-5.
- EXNER, O. (1975). Dipole Moments in Organic Chemistry. Thieme, Stuttgart. 156 pp.
- FASMAN, G.D. (1989). In *Prediction of Protein Structure and the Principles of Protein Conformation*. G.D. Fasman (ed.), Plenum, New York. 789 pp.
- FELDMAN, G.J. and J. STEINBERGER (1991). The number of families of matter. *Sci. Amer.* 264(2): 26-33.
- FESSER, K., A.R. BISHOP and D.K. CAMPBELL (1983). Optical absorption from polarons in a model of polyacetylene. *Phys. Rev.* B27: 4804-4825.
- FINNEY, J.L. (1979). In *Water: A Comprehensive Treatise*. F. Franks (ed.). Vol. 6, p. 47. Plenum, New York.
- FÖRSTER, T. (1948). In Drake *et al.*, 1991.
- FRANCIOLINI, F. (1990). From protozoa to mammals: cytoplasmic membrane systems involved in calcium regulation. In *Calcium as an Intracellular Messenger in Eucaryotic Microbes*. Pp. 14-29. D.H. O'Day (ed.), Amer. Soc. Microbiol., Washington, D.C. 418 pp.

- FRIEND, R.H., D.D.C. BRADLEY and P.D. TOWNSEND (1987). Photo-excitation in conjugated polymers. *J. Phys.* D20: 1367-1384.
- FRY, S.C. and E. WANGERMANN (1976). Polar transport of auxin through embryos. *New Phytol.* 77: 313-317.
- FUKUI, Y. (1990). Actomyosin organization in mitotic *Dictyostelium* amoebae. In *Cytokinesis. Mechanisms of Furrow Formation during Cell Division*. G.W. Conrad and T.E. Schroeder (eds), *Ann. N.Y. Acad. Sci.* 582: 156-165.
- FULLER, M.S. and L.W. OLSON (1971). The zoospore of *Allomyces*. *J. Gen. Microbiol.* 66: 171-183.
- FULTON, C. (1990). Calcium, calmodulin, and cell differentiation in the amoeboflagellate *Naegleria*. In *Calcium as an Intracellular Messenger in Eucaryotic Microbes*. Pp. 301-316. D.H. O'Day (ed.), Amer. Soc. Microbiol., Washington, D.C. 418 pp.
- FURUKAWA, R., J.E. WAMPLER and M. FECHHEIMER (1990). Cytoplasmic pH of *Dictyostelium discoideum* amoebae during early development: Identification of two cell subpopulation before the aggregation stage. *J. Cell Biol.* 110: 1947-1954.
- FYRBERG, E.A. and L.S.B. GOLDSTEIN (1990). The *Drosophila* cytoskeleton. *Ann. Rev. Cell Biol.* 6: 559-596.
- GALLOWAY, J. (1990b). A handle on handedness. *Nature* 346: 223-224.
- GARBOW, J.R. (1983). Heteronuclear dipolar couplings, total spin coherence, and bilinear rotations in NMR spectroscopy. Thesis. Univ. California, Berkeley. 262 pp.
- GARNIER, F., G. HOROWITZ, X. PENG and D. FICHOU (1990). In Bloor, 1991.
- GERHART, J., M. DANILCHIK, T. DONIACH, S. ROBERTS, B. ROWNING and R. STEWART (1989). Cortical rotation of the *Xenopus* egg: consequences for the anteroposterior pattern of embryonic dorsal development. *Development* 107 (Suppl.): 37-51.
- GIACOMELLI, G. (1984). Magnetic monopoles. *Rivist. Nuovo Cimento Soc. Itali. Fisica.* Ser. 3, vol. 7: 1-111.
- GIANINAZZI-PEARSON, V., S.E. SMITH, S. GIANINAZZI and F.A. SMITH (1991). Enzymatic studies on the metabolism of vesicular-arbuscular mycorrhizas. V. Is H⁺-ATPase a component of ATP-hydrolysing enzyme activities in plant-fungus interfaces? *New Phytol.* 117: 61-74.
- GIBBONS, I.R. (1989). Microtubule-based motility: an overview of a fast-moving field. In *Cell Movement: The Dynein ATPases*, vol. 1, pp. 322. F.D. Warner, P. Satir and I.R. Gibbons (eds), Alan R. Liss, New York. 337 pp.
- GILBERTSON, T.A., R. SCOBAY and M. WILSON (1991). Permeation of calcium ions through non-NMDA glutamate channels in retinal bipolar cells. *Science* 251: 1613-1618.
- GOLDBERG, M., D. THOMAS and M.-D. LEGOY (1990). The control of lipase-catalyzed transesterification and esterification reaction rates: effects of substrate polarity, water activity and water molecules on enzyme activity. *Eur. J. Biochem.* 190: 603-610.
- GOLDMAN, M. (1977). Nuclear dipolar magnetic ordering. *Physics Reports* 32C: 1-67.
- GOTTFRIED, D.S., M.A. STEFFEN and S.G. BOXER (1991). Large protein-induced dipoles for a symmetric carotenoid in a photosynthetic antenna complex. *Science* 251: 662-265.
- GOULD, A.P., J.J. BROOKMAN, D.I. STRUTT and R.A.H. WHITE (1990). Targets of homeotic gene control in *Drosophila*. *Nature* 348: 308-312.
- GRADMANN, D. (1976). "Metabolic" action potentials in *Acetabularia*. *J. Membr. Biol.* 29: 23-45.
- GREBENE, A.B. (1984). Bipolar and MOS Analog Integrated Circuit Design. Wiley, New York. 894 pp.
- GREEN, J.B.A and J.C. SMITH (1990). Graded changes in dose of a *Xenopus* activin A homologue elicit stepwise transitions in embryonic cell fate. *Nature* 347: 391-394.
- GREEN, L. (1968). Mechanism of movements of granules in melanocytes of *Fundulus heteroclitus*. *Proc. Natn. Acad. Sci. U.S.A.* 59: 1179-1186.
- GREENWOOD, M.S. and M.H.M. GOLDSMITH (1970). Polar transport and accumulation of indole-3-acetic acid during root regeneration by *Pinus lambertiana* embryos. *Planta* 95: 297-313.

- GREPPIN, H., M. BONZON, P. CRESPI, M. CREVECOEUR, R. DEGLI AGOSTI and C. PENEL (1990). Physical macrofunctions and indicators of the flowering process. In *Intra- and Intercellular Communications in Plants. Reception - Transmission - Storage and Expression of Messages*. Pp. 107-123. B. Millet and H. Greppin (eds), INRA, Paris. 175 pp.
- GRIFFING, L.R. and P.M. RAY (1985). Involvement of monovalent cations in Golgi secretion by plant cells. *Eur. J. Cell Biol.* 36: 24-31.
- GUNDERSEN, G.G. and J.C. BULINSKI (1988). Selective stabilization of microtubules oriented toward the direction of cell migration. *Proc. Natn. Acad. Sci. U.S.A.* 85: 5946-5960.
- GUTZEIT, H.O. (1986a). The role of microtubules in the differentiation of ovarian follicles during vitellogenesis in *Drosophila*. *Wilhelm Roux Arch. Dev. Biol.* 195: 173-181.
- (1986b). The role of microfilaments in cytoplasmic streaming in *Drosophila* follicles. *J. Cell Sci.* 80: 159-169.
- HAERD, T. (1986). DNA mobility and dynamics steady-state fluorescence polarization studies. Thesis. Goeteborg. 40 pp.
- HAIMO, L.T. (1989). Polarity of dynein binding to cytoplasmic microtubules. In *Cell Movement: The Dynein ATPases*. Vol. 1, pp. 155-165. F.D. Warner, P. Satir and I.R. Gibbons (eds), Alan R. Liss, New York. 337 pp.
- HAKANSSON, A. (1988). Experimental studies of giant multipole resonance in nuclei. Thesis. Univ. Uppsala. 38 pp.
- HAMILTON, D.P. (1990). Superconductor race shifts to a new arena (HTS theory: where's the beef?). *Science* 250: 374-375.
- HAN, H.-Q., R.A. NICHOLS, M.R. RUBIN, M. BÄHLER and P. GREENGARD (1991). Induction of formation of presynaptic terminals in neuroblastoma cells by synapsin IIb. *Nature* 349: 697-700.
- HANES, S.D. and R. BRENT (1991). A genetic model for interaction of the homeodomain recognition helix with DNA. *Science* 251: 426-430.
- HANSEN, M.T., P.M. BENNETT and K. VON MEYENBURG (1973). Intracistronic polarity during dissociation of translation from transcription in *Escherichia coli*. *J. Mol. Biol.* 77: 589-604.
- HARDING, A.K. (1991). Physics in strong magnetic fields near neutron stars. *Science* 251: 1033-1038.
- HAROLD, F.M. (1990). To shape a cell: an inquiry into the causes of morphogenesis of microorganisms. *Microbiol. Rev.* 54: 381-431.
- HAROLD, F.M. and Y. KAKINUMA (1985). Primary and secondary transport of cations in bacteria. In *Membrane Transport Driven by Ion Gradients*. G. Semenza and R. Kinne (eds), *Ann. N.Y. Acad. Sci.* 456: 375-383.
- HARRISON, R.G. (1921). On relations of symmetry in transplanted limbs. *J. Exp. Zool.* 32: 1-136.
- HARRISON, S.C. and A.K. AGGARWAL (1990). DNA recognition by proteins with the helix-turn-helix motif. *Ann. Rev. Biochem.* 59: 933-969.
- HARTMANN, H.A., G.E. KIRSCH, J.A. DREWE, M. TAGLIALATELA, R.H. JOHO and A.M. BROWN (1991). Exchange of conduction pathways between two related K⁺ channels. *Science* 251: 942-944.
- HAUPT, W. and G. BOCK (1962). Die Chloroplastendrehung bei *Mougeotia*. IV. Die Orientierung der Phytochrom-Moleküle im Zytoplasma. *Planta* 59: 38-48.
- HEATH, I.B. (ed.) (1990). *Tip Growth in Plant and Fungal Cells*. Academic Press, Harcourt Brace Jovanovich, Publ. New York, London. 351 pp.
- HEDRICH, R. and J.I. SCHROEDER (1989). The physiology of ion channels and electrogenic pumps in higher plants. *Ann. Rev. Plant Phys.* 40: 539-569.
- HEIDEMANN, S.R. and J.R. MCINTOSH (1980). Visualization of the structural polarity of microtubules. *Nature* 286: 517-519.
- HEIDEMANN, S.R., J.M. LANDERS and M.A. HAMBORG (1981). Polarity orientation of axonal microtubules. *J. Cell Biol.* 91: 661-665.
- HERENDEEN, D.R., G.A. KASSAVETIS, J. BARRY, B.M. ALBERTS and E.P. GEIDUSCHEK (1990). Enhancement of bacteriophage T4 late transcription by components of the T4 DNA replication apparatus. *Science* 245: 952-958.

- HESLOP-HARRISON, J. and Y. HESLOP-HARRISON (1989). Conformation and movement of the vegetative nucleus of the angiosperm pollen tube: association with the actin cytoskeleton. *J. Cell Sci.* 93: 299-308.
- HESSE, M. (1991). Cytology and morphogenesis of pollen and spores. *Progr. Bot.* 52: 19-34.
- HIRANO, S., S. FUSE and G.S. SOHAL (1991). The effect of the floor plate on pattern and polarity in the developing central nervous system. *Science* 251: 310-313.
- HOCH, D.H. and A. FINKELSTEIN (1985). Gating of large toxin channels by pH. In *Membrane Transport Driven by Ion Gradients*. G. Semenza and R. Kinne (eds), *Ann. N.Y. Acad. Sci.* 456: 33-35.
- HOFFMAN, M. (1990). The embryo takes its vitamins. *Science* 250: 272-373.
- HOL, W.G. (1985). The role of the α -helix dipole in protein function and structure. *Prog. Biophys. Mol. Biol.* 45: 149-195.
- HOL, W.G.J., P.T. VAN DUJNEN and H.J.C. BERENDSEN (1978). The α -helix dipole and the properties of proteins. *Nature* 273: 443-446.
- HOLLIDAY, R. (1989). A molecular approach to the problem of positional information in eggs and early embryos. *New Biologist* 1: 337-343.
- (1990). Ambidextrous RNA. *Nature* 348: 491-492.
- HOLLOWAY, S.A. and I.B. HEATH (1977). Morphogenesis and the role of microtubules in synchronous populations of *Saprolegnia* zoospores. *Exp. Mycol.* 1: 9-29.
- HOLMES, K.C., D. POPP, W. GEBHARD and W. KABSCH (1990). The atomic model of the actin filament. *Nature* 347: 44-49.
- HOLMSTEDT, B., F. HARTMUT and B. TESTA (eds) (1989). Chirality and Biological Activity. From a Symposium, Tübingen, F.R.G. (April 1988). Liss, (Wiley). 283 pp.
- HORVATHY, P.A. (1988). Introduction to Monopoles. Bibliopolis, Napoli. 93 pp.
- HUNTER, L.R. (1991). Tests of time-reversal invariance in atoms, molecules, and the neutron. *Science* 252: 73-79.
- HYMAN, A.A. and T.J. MITCHISON (1991). Two different microtubule-based motor activities with opposite polarities in kinetochores. *Nature* 351: 206-211.
- IJIMA, N. and Y. MAEDA (1990). The influence of pH on the choice between sexual and asexual development in *Dictyostelium mucoroides*. *J. Gen. Microbiol.* 136: 1739-1745.
- INGBER, D., T. FUJITA, S. KISHIMOTO, K. SUDO, T. KANAMARU, H. BREM and J. FOLKMAN (1990). Synthetic analogues of fumagillin that inhibit angiogenesis and suppress tumour growth. *Nature* 348: 555-557.
- ISHIKAWA, H. (1979). Identification and distribution of intracellular filaments. In *Cell Motility: Molecules and Organization*. Pp. 417-444. S. Hatano, H. Ishikawa and H. Sato (eds), University Park Press, Baltimore. 695 pp.
- ISHIKAWA, H. and M.L. EVANS (1990a). Electrotropism of maize roots. *Plant Physiol.* 94: 913-918.
- (1990b). Gravity-induced changes in intracellular potentials in elongating cortical cells of mung bean roots. *Plant Cell. Physiol.* 31: 457-462.
- ISHIKAWA, H. *et al.* (1969). In Borisy, 1978.
- ITIKAWA, Y. (1978). Electron scattering by polar molecules. *Physics Reports* 46(4): 117-164.
- IZPISUA-BELMONTE, C. TICKLE, P. DOLLÉ, L. WOLPERT and D. DUBOULE (1991). Expression of the homeobox *Hox-4* genes and the specification of position in chick wing development. *Nature* 350: 585-589.
- JAENICKE, L. (1991). Signals in the development of cryptogams. *Progr. Bot.* 52: 138-189.
- JAROSCH, R. (1979). The torsional movement of tropomyosin and the molecular mechanism of the thin filament motion. In *Cell Motility: Molecules and Organization*. Pp. 291-320. S. Hatano, H. Ishikawa and H. Sato (eds), University Park Press, Baltimore. 695 pp.
- JENNI, V., H. CATTELAN and U.-P. ROOS (1990). Immunofluorescence and ultrastructure of mitosis and cell division in the fern *Athyrium filix-femina*. *Bot. Helv.* 100: 101-119.

- JENSEN, K.F. AND S. PEDERSEN (1990). Metabolic growth rate control in *Escherichia coli* may be a consequence of subsaturation of the macromolecular biosynthetic apparatus with substrates and catalytic components. *Microbiol. Rev.* 54: 89-100.
- JOHNSEN, K., S. MOLIN, O. KARLSTRÖM AND O. MAALOE (1977). Control of protein synthesis in *Escherichia coli*: analysis of an energy source shift-down. *J. Bacteriol.* 131: 18-29.
- JOHNSON, D.I. AND J.R. PRINGLE (1990). Molecular characterization of *CDC42*, a *Saccharomyces cerevisiae* gene involved in the development of cell polarity. *J. Cell Biol.* 111: 143-152.
- JOHNSON, D.I., J.M. O'BRIEN AND C.W. JACOBS (1990). Isolation and sequence analysis of *CDC43*, a gene involved in the control of cell polarity in *Saccharomyces cerevisiae*. *Gene* 90: 93-98.
- JOHNSON, R.G. (1987). Proton pumps and chemiosmotic coupling as a generalized mechanism for neurotransmitter and hormone transport. In *Cellular and Molecular Biology of Hormone- and Neurotransmitter-Containing Secretory Vesicles*. R.G. Johnson (ed.), *Ann. N.Y. Acad. Sci.* 493: 162-177.
- JOHNSON, R.G., S.E. CARTY AND A. SCARPA (1987). Coupling of H⁺ gradients to catecholamine transport in chromaffin granules. In *Membrane Transport Driven by Ion Gradients*. G. Semenza and R. Kinne (eds), *Ann. N.Y. Acad. Sci.* 456: 254-267.
- KABSCH, W., H.G. MANNHERZ, D. SUCK, E.F. PAI AND K.C. HOLMES. (1990). Atomic structure of the actin: DNase I complex. *Nature* 347: 37-44.
- KAPTEIN, R. (1975). Chemically induced dynamic nuclear polarisation: theory and applications in mechanistic chemistry. In *Advances in Free-Radical Chemistry*. Vol. 5, pp. 319-380. Academic Press. New York.
- KASAI, H. AND G.J. AUGUSTINE (1990). Cytosolic Ca²⁺ gradients triggering unidirectional fluid secretion from exocrine pancreas. *Nature* 348: 735-738.
- KAWAMURA, K.-Y. AND N. YAMASHIKI (1990). Factors inducing unequal cytokinesis in grasshopper neuroblasts. In *Cytokinesis. Mechanisms of Furrow Formation during Cell Division*. G.W. Conrad and T.E. Schroeder (eds), *Ann. N.Y. Acad. Sci.* 582: 304-306.
- KELL, D.B. (1988). Protonmotive energy-transducing systems: some physical principles and experimental approaches. In *Bacterial Energy Transduction*. Pp. 429-490. C. Anthony (ed.) Academic Press, London, New York. 517 pp.
- KELL, D.B. AND H.V. WESTERHOFF (1985). In *Organised Multienzyme Systems; Catalytic Properties*. Pp. 63-139. G.R. Welch (ed.), Academic Press, New York.
- KIEBLER, M., R. PFALLER, T. SÖLLNER, G. GRIFFITHS, H. HORSTMANN, N. PFANNER AND W. NEUPERT (1990). Identification of a mitochondrial receptor complex required for recognition and membrane insertion of precursor proteins. *Nature* 348: 610-616.
- KIRSCHNER, M.W. AND T. MITCHISON (1986). Microtubule dynamics. *Nature* 324: 621-625.
- KLEENE, S.J. AND R.C. GESTELAND (1991). Transmembrane currents in frog olfactory cilia. *J. Membrane Biol.* 120: 75-81.
- KNAPP, D.G. (1980). On modeling magnetic fields on a sphere with dipoles and quadrupoles: a study of the global geomagnetic field with special emphasis on quadrupoles. Geological Survey professional paper, 1118. United States Government Printing Office, Washington.
- KNOWLES, J.R. (1991). Enzyme catalysis: not different, just better. *Nature* 350: 121-124.
- KOCH, A.L. (1982). The shape of the hyphal tips of fungi. *J. Gen. Microbiol.* 128: 947-951.
- KONDEPUDI, D., R.J. KAUFMAN AND N. SINGH (1990). Chiral symmetry breaking in sodium chlorate crystallization. *Science* 250: 975-976.
- KROPF, D.L. (1989). In Jaenicke, 1991.
- KURABUCHI, S. AND Y. KISHIDA (1990). Comparative study of the influence of head and tail grafts on axial polarity in regeneration of the freshwater planarian. *Zool. Sci.* 7: 841-847.
- KURKDJIAN, A. AND J. GUERN (1989). Intracellular pH: measurement and importance in cell activity. *Ann. Rev. Plant Physiol. Plant Mol. Biol.* 40: 271-303.
- KUSANO, K., R. MILEDI AND J. STINNAKRE (1982). Cholinergic and catecholaminergic receptors in the *Xenopus* oocyte membrane. *J. Physiol.* 328: 143-170.

- LADA, C.J. and F.H. SHU (1990). The formation of sunlike stars. *Science* 248: 564-572.
- LASKOWSKI, M. (1990). Microtubule orientation in pea stem cells: a change in observed orientation follows the initiation of growth rate decline. *Planta* 181: 44-52.
- LEDERMAN, L.M. (1991). The Tevatron. *Sci. Amer.* 264(3): 26-33.
- LEHMANN, R. and H.G. FROHNHÖFER (1989). Segmental polarity and identity in the abdomen of *Drosophila* is controlled by the relative position of gap gene expression. *Development* 107 (Suppl.): 21-29.
- LEHMANN, V. (1975). Untersuchungen über die Polarisierung und Zersetzung von Kupfer- und Silbersulfid bei höheren Temperaturen durch Anlegen einer elektrischen Spannung mit elektronenleitenden Elektroden. Diss. Univ. Dortmund. 96 pp.
- LEVIN, D.E. and J.M. BISHOP (1990). A putative protein kinase gene (*kin1+*) is important for growth polarity in *Schizosaccharomyces pombe*. *Proc. Natn. Acad. Sci. U.S.A.* 87: 8272-8276.
- LINCK, R.W. (1989). Perspective. Microtubule structure and function. In *Cell Movement: Kinesin, Dynein, and Microtubule Dynamics*, vol. 2, pp. 13-21. F.D. Warner and J.R. McIntosh (eds), Alan R. Liss, New York.
- LING, G.N. (1962). A Physical Theory of the Living State: the Association-Induction Hypothesis. Blaisdell Publ. Co., New York, London.
- LIPTAY, W., R. WORTMANN, R. BÖHM and N. DETZER. (1988). Excited state dipole moment and polarizabilities of centrosymmetric and dimeric molecules. II. Polyenes, polyynes and cumulenes. *Chem. Phys.* 120: 439-448.
- LISANTI, M.P. and E. RODRIGUEZ-BOULAN (1990). Glycophospholipid membrane anchoring provides clues to the mechanism of protein sorting in polarized epithelial cells. *Trends Biochem. Sci.* 15: 113-118.
- LLOYD, C. (1991). Probing the plant cytoskeleton. *Nature* 350: 189-190.
- LONERGAN, T.A. (1990). Role of actin, myosin, microtubules, and calmodulin in regulating the cellular shape of *Euglena gracilis*. In *Calcium as an Intracellular Messenger in Eucaryotic Microbes*. Pp. 258-277. D.H. O'Day (ed.), Amer. Soc. Microbiol., Washington, D.C. 418 pp.
- LÜTHEN, H., M. BIGDON and M. BÖTTGER (1990). Reexamination of the acid growth theory of auxin action. *Plant Physiol.* 93: 931-939.
- MABUCHI, I., S. TSUKITA, S. TSUKITA and T. SAWAI (1988). Cleavage furrow isolated from newt eggs: contraction, organization of the actin filaments, and protein components of the furrow. *Proc. Natn. Acad. Sci. U.S.A.* 85: 5966-5970.
- MAHOWALD, M.A. and C. MEAD (1991). The silicon retina. *Sci. Amer.* 264(5): 40-46.
- MANDELKOW, E.-M., K. LINSE and E. MANDELKOW (1987). Polar properties of the tubulin molecule. *Eur. J. Cell Biol.* suppl. 17 (vol. 43): 68.
- MARUYAMA Y.K. (1990). Roles of the polar cytoplasmic region in meiotic divisions in oocytes of the sea cucumber, *Holothuria leucospilota*. *Biol. Bull.* 179: 264-271.
- MATSUOKA, H., S. MATSUMOTO, M. KINOSHITA and S. YAMADA (1991). Effective stage in the cell cycle for control of the budding direction of *cdc* mutants of *Saccharomyces cerevisiae* using electric stimulus. *Biochim. Biophys. Acta* 971: 255-265.
- MCCLELLAN, A.L. (1963-). Tables of Experimental Dipole Moments. Vol. 1. Freeman, San Francisco. Vol. 2+3, Raha Enterprises, El Cerrito, CA.
- MCCONNELL, H.M. and V.T. MOY (1988). Shapes of finite two-dimensional domains. *J. Phys. Chem.* 92: 4520-4525.
- MCDONALD, H.B., R.J. STEWART and L.S.B. GOLDSTEIN (1990). The kinesin-like *ncd* protein of *Drosophila* is a minus end-directed microtubule motor. *Cell* 63: 1159-1165.
- MCGILLIVRAY, A.M. and N.A.R. GOW (1986). Applied electrical fields polarize the growth of mycelial fungi. *J. Gen. Microbiol.* 132: 2515-2525.
- MCMAHON, M.I., R.J. NELMES, W.F. KUHS, R. DORWARTH, R.O. PILTZ and Z. TUN (1990). Geometric effects of deuteration on hydrogen-ordering phase transitions. *Nature* 348: 317-319.

- MCNEILL, H., M. OZAWA, R. KEMLER and W.J. NELSON (1990). Novel function of the cell adhesion molecule uvomorulin as an inducer of cell surface polarity. *Cell* 62: 309-316.
- MCNIVEN, M.A. and K.R. PORTER (1984). Chromatophores - model for studying cytomatrix translocations. *J. Cell Biol.* 99: 152s-158s.
- MELTON, D.A. (1991). Pattern formation during animal development. *Science* 252: 234-241.
- MEYER, T. (1991). Cell signaling by second messenger waves. *Cell* 64: 675-678.
- MILLER, D.J. (1991). Particles physics after a year of LEP. *Nature* 349: 379-387
- MISEK, D.E., E. BARD and E. RODRIGUEZ-BOULAN (1984). Biogenesis of epithelial cell polarity: Intracellular sorting and vectorial exocytosis of an apical plasma membrane glycoprotein. *Cell* 39: 537-546.
- MOHN, W.W., T.G. LINKFIELD, H.S. PANKRATZ and J.M. TIEDJE (1990). Involvement of a collar structure in polar growth and cell division of strain DCB-1. *Appl. Environ. Microbiol.* 56: 1206-1211.
- MOL, P.C. and J.G.H. WESSELS (1990). Differences in wall structure between substrate hyphae and hyphae of fruit-body stipes in *Agaricus bisporus*. *Mycol. Res.* 94: 472-479.
- MONTESANO R., M.S. PEPPER, U. MÖHLE-STEINLEIN, W. RISAU, E.F. WAGNER and L. ORCI (1990). Increased proteolytic activity is responsible for the aberrant morphogenetic behavior of endothelial cells expressing the middle T oncogene. *Cell* 62: 435-445.
- MOSIG, G. (1987). The essential role of the recombination in phage T4 growth. *Ann. Rev. Genet.* 21: 347-371.
- NAGAI, R. and T. HAYAMA (1979). Ultrastructural aspects of cytoplasmic streaming in Characean cells. In *Cell Motility: Molecules and Organization*. Pp. 321-338. S. Hatano, H. Ishikawa and H. Sato (eds), University Park Press, Baltimore. 695 pp.
- NAWY, S. and C.E. JAHR (1990). Suppression by glutamate of cGMP-activated conductance in retinal bipolar cells. *Nature* 346: 269-271.
- NEHER, E. and B. SAKMANN (1976). Single-channel currents recorded from membrane of denervated frog muscle fibres. *Nature* 260: 799-802.
- NEUBAUER, K.H., S. CHRISTIANS, S.A.H. HOFFMEISTER, S. KREGER and H.C. SCHALLER (1991). Characterization of two types of head activator receptor on hydra cells. *Mechanisms of Development* 33: 39-48.
- NEUDECK, G.W. (1989). The Bipolar Junction Transistor. Modular series on solid state devices, vol. 3. Addison-Wesley, Reading, Massachusetts. 117 pp.
- NEWTON, A. and N. OHTA (1990). Regulation of the cell division cycle and differentiation in bacteria. *Ann. Rev. Microbiol.* 44: 689-719.
- NOSI, S. *et al.* (1991). In Brookes, 1991.
- NOLLER, H. and W. KLADNIG (1976). Elimination reaction over polar catalysts: mechanistic considerations. *Catalysis Reviews* 13: 149-207.
- NOVAK, B. and C. SIRONVAL (1976). Circadian rhythm of the transcellular current in regenerating enucleated posterior stalk segments of *Acetabularia mediterranea*. *Plant Sci. Lett.* 6: 273-283.
- NUCCITELLI, R. (1988). Ionic currents in morphogenesis. *Experientia* 44: 657-666.
- O'FARRELL, P.H., B.A. EDGAR, D. LAKICH and C.F. LEHNER. (1989). Directing cell division during development. *Science* 246: 635-640.
- O'NEIL, K.T. and W.F. DEGRADO (1990). A thermodynamic scale for the helix-forming tendencies of the commonly occurring amino acids. *Science* 250: 246-251.
- OAKLEY, B.R., C.E. OAKLEY, Y. YOON and M.K. JUNG (1990). Y-tubulin is a component of the spindle pole body that is essential for microtubule function in *Aspergillus nidulans*. *Cell* 61: 1289-1301.
- OBAR, R.A., C.A. COLLINS, J.A. HAMMARBACK, H.S. SHPETNER and R.V. VALLEE (1990). Molecular cloning of the microtubule-associated mechanochemical enzyme dynamin reveals homology with a new family of GTP-binding proteins. *Nature*: 347: 256-261.
- OHNISHI, R. (1979). Cinematographic analysis of ruffling movement of L cells. In *Cell Motility: Molecules and Organization*. Pp. 251-262. S. Hatano, H. Ishikawa and H. Sato (eds), University Park Press, Baltimore. 695 pp.

- OLIVE, K.A. (1991). The quark-hadron transition in cosmology and astrophysics. *Science* 251: 1194-1199.
- ORON, Y., N. DASCAL, E. NADLER and M. LUPU (1985). Inositol 1,4,5-trisphosphate mimics muscarinic response in *Xenopus* oocytes. *Nature* 313: 141-143.
- PAGANO, R.E. (1990). Lipid traffic in eukaryotic cells: mechanisms for intracellular transport and organelle-specific enrichment of lipids. *Curr. Opin. Cell Biol.* 2: 652-663.
- PALMER, R.E., M. KOVAL and D. KOSHLAND (1989). The dynamics of chromosome movement in the budding yeast *Saccharomyces cerevisiae*. *J. Cell Biol.* 109: 3355-3366.
- PEACOCKE, A.R. (1983). An Introduction to the Physical Chemistry of Biological Organization. Clarendon Press, Oxford. 302 pp.
- PENG, I., J.E. DENNIS, E. RODRIGUEZ-BOULAN and D.A. FISCHMAN (1990). Polarized release of enveloped viruses in the embryonic chick heart: demonstration of epithelial polarity in the presumptive myocardium. *Develop. Biol.* 141: 164-172.
- PICKETT-HEAPS, J.D. and D.H. NORTHCOTE (1966). Organization of microtubules and endoplasmic reticulum during mitosis and cytokinesis in wheat meristems. *J. Cell Sci.* 1: 109-120.
- PICTON, J.M. and M.W. STEER (1982). A model for the mechanism of tip extension in pollen tubes. *J. Theor. Biol.* 98: 15-20.
- (1983). Evidence for the role of Ca^{2+} ions in tip extension in pollen tubes. *Protoplasma* 115: 11-17.
- POETHIG, R.S. (1990). Phase change and the regulation of shoot morphogenesis in plants. *Science* 250: 923-930.
- POLLARD, H.B., E. ROJAS and A.L. BURNS (1987). Synexin and chromaffin granule membrane fusion. A novel "hydrophobic bridge" hypothesis for the driving and directing of fusion process. In *Cellular and Molecular Biology of Hormone- and Neurotransmitter-Containing Secretory Vesicles*. R.G. Johnson (ed.), *Ann. N.Y. Acad. Sci.* 493: 524-541.
- POLLARD, T.D., L. SATTERWHITE, L. CISEK, J. CORDEN, M. SATO and P. MAUPIN (1990). Actin and myosin biochemistry in relation to cytokinesis. In *Cytokinesis. Mechanisms of Furrow Formation during Cell Division*. G.W. Conrad and T.E. Schroeder (eds), *Ann. N.Y. Acad. Sci.* 582: 120-130.
- POOL, R. (1990). Electromagnetic fields: the biological evidence. *Science* 249: 1378-1381.
- PRIESS, J.R. and J.N. THOMSON (1987). Cellular interactions in early *C. elegans* embryos. *Cell* 48: 241-250.
- PRIGOGINE, I. and J. STENGERS (1984). Order out of Chaos. Bantam, New York.
- PRINZ, G.A. (1990). Hybrid ferromagnetic-semiconductor structures. *Science* 250: 1092-1097.
- PROST, J. and F. RONDELEZ (1991). Structures in colloidal physical chemistry. *Suppl. Nature* 350: 11-23.
- PUGSLEY, A.P. and M. SCHWARTZ (1985). Export and secretion of proteins by bacteria. *FEMS Microbiol. Rev.* 32: 3-38.
- RACUSEN, R.H. and F.M. SCHIAVONE (1990). Positional cues and differential gene expression in somatic embryos of higher plants. *Cell Differentiation and Development* 30: 159-169.
- RAPOPORT, T.A. (1990). Protein transport across the ER membrane. *Trends Biochem. Sci.* 15: 355-358.
- RATHORE, K.S., T.K. HODGES and K.R. ROBINSON (1988). Ionic basis of currents in somatic embryos of *Daucus carota*. *Planta* 175: 280-289.
- REIMARSSON, P. (1979). NMR studies of quadrupolar ions in aqueous solution and biological systems. Thesis. Univ. Lund.
- REISS, H.-D. and W. HERTH (1979). Calcium gradients in tip growing plant cells visualized by chlorotetracycline fluorescence. *Planta* 146: 615-621.
- RICHARDS, F.M. (1991). The protein folding problem. *Sci. Amer.* 264(1): 34-41.
- RICHETTI, P., P. KEKICHEFF, J.L. PARKER and B.W. NINHAM (1990). Measurement of the interactions between membranes in a stack. *Nature* 246: 252-254.
- RIDDLE, D.L. and L.L. GEORGI (1990). Advances in research on *Caenorhabditis elegans*: application to plant parasitic nematodes. *Ann. Rev. Phytopathol.* 28: 247-269.

- ROBERSON, R.W. and M.S. FULLER (1990). Effects of the demethylase, cyproconazole, on hyphal tip cells of *Sclerotium rolfsii*. *Exp. Mycol.* 14: 124-135.
- ROBERTSON, J.M. and A.R. UBBELOHDE (1939). Structure and thermal properties associated with some hydrogen bonds in crystals. I. The isotope effect. *Proc. R. Soc. A* 170: 222-240.
- RODRIGUEZ-BOULAN, E.J. (1983). Membrane biogenesis, enveloped RNA viruses and epithelial polarity. *Mol. Cell Biol.* 1: 119-170.
- RODRIGUEZ-BOULAN, E. and D.D. SABATINI (1978). Asymmetric budding of viruses in epithelial monolayers: A model system for study of epithelial polarity: *Proc. Natn. Acad. Sci. U.S.A.* 75: 5071-5075.
- RODRIGUEZ-BOULAN, E. and W.J. NELSON (1989). Morphogenesis of the polarized epithelial cell phenotype. *Science* 245: 718-725.
- RODRIGUEZ-NAVARRO, A., M.R. BLATT and C.L. SLAYMAN (1986). A potassium-proton symport in *Neurospora crassa*. *J. Gen. Physiol.* 87: 649-674.
- ROSSIER, B.C., K. GEERING and J.P. KRAEHNBUHL (1987). Regulation of the sodium pump: how and why? *Trends Biochem. Sci.* 12: 483-487.
- ROTHMAN, J.E. (1985). The compartmental organization of the Golgi apparatus. *Sci. Amer.* 253(3): 84-95.
- ROTHMAN, J.E. and J. LENARD (1977). Membrane asymmetry. *Science* 195: 743-753.
- ROUT, M.P. and J.V. KILMARTIN (1990). Components of the yeast spindle and spindle pole body. *J. Cell Biol.* 111: 1913-1927.
- RUBBIA, C. (1985). *Rev. mod. Phys.* 57: 689-722. In Miller, 1991.
- RUBINSTEIN, B., A.I. STERN and J.D.C. CHALMERS (1990). Measurements of redox activity at the plasmalemma. *Physiol. Plant.* 80: 479-486.
- RUDNICK, G. (1987). The vacuolar ATPase is responsible for acidifying secretory organelles. In *Cellular and Molecular Biology of Hormone- and Neurotransmitter-Containing Secretory Vesicles*. R.G. Johnson (ed.), *Ann. N.Y. Acad. Sci.* 493: 261-263.
- SALE, W.S. and P. SATIR (1977). Direction of active sliding of microtubules in *Tetrahymena* cilia. *Proc. Natn. Acad. Sci. U.S.A.* 74: 2045-2049.
- SANCHEZ-DEHESA, J. (1977). Microscopic description of giant electric and magnetic multipole resonances in closed-shell nuclei. Thesis. Univ. Bonn. 147 pp.
- SANDAR, C.S. (1980). A bipolar-compatible monolithic capacitive pressure sensor. Thesis. Stanford Univ., California.
- SANDERSON, R.T. (1983). Polar Covalence. Academic Press, New York. 240 pp.
- SAUER, H.W. (1982). Developmental Biology of *Physarum*. Cambridge Univ. Press. 237 pp.
- SAUER, H.W. and G. PIERRON (1983). Morphogenesis and differentiation in *Physarum*. In *Fungal Differentiation. A Contemporary Synthesis*. Pp. 73-106. J.E. Smith (ed.), Marcel Dekker, New York, Basel. 624 pp.
- SCHIAVONE, F.M. (1988). Microamputation of somatic embryos of the domestic carrot reveals apical control of axis elongation and root regeneration. *Development* 103: 657-664.
- SCHNAPP, B.J., R.D. VALE, M.P. SHEETZ and T.S. REESE (1985). Single microtubules from squid axoplasm support bidirectional movement of organelles. *Cell* 40: 455-462.
- SCHRIEFFER, R. (1991). High-temperature superconductivity theory. *Science* 251: 1005.
- SCHROEDER, T.E. (1972). The contractile ring. II. Determining its brief existence, volumetric changes, and vital role of cleaving *Arbacia* eggs. *J. Cell Biol.* 53: 419-434.
- SCHROER, T.A., B.J. SCHNAAP, T.S. REESE and M.P. SHEETZ (1988). The role of kinesin and other soluble factors in organelle movement along microtubules. *J. Cell Biol.* 107: 1785-1792.
- SCHWARTZ, M.A. and E.J. LUNA (1988). How actin binds and assembles onto plasma membranes from *Dictyostelium discoideum*. *J. Cell Biol.* 107: 201-209.
- SCHWARZ-SOMMER, Z., P. HUIJSER, W. NACKEN, H. SAEDLER and H. SOMMER (1990). Genetic control of flower development by homeotic genes in *Antirrhinum majus*. *Science* 250: 931-936.

- SELLERS, J.R. AND B. KACHAR (1990). Polarity and velocity of sliding filaments: control of direction by actin and speed by myosin. *Science* 249: 406-408.
- SEMENZA, G., M. KESSLER, U. SCHMIDT, J.C. VENTER and C.M. FRASER (1985). The small-intestinal sodium-glucose cotransporter(s). In *Membrane Transport Driven by Ion Gradients*. G. Semenza and R. Kinne (eds), *Ann. N.Y. Acad. Sci.* 456: 83-96.
- SHARIFF, A. and E.J. LUNA (1990). *Dictyostelium discoideum* plasma membranes contain an actin-nucleating activity that requires ponticulin, an integral membrane glycoprotein. *J. Cell Biol.* 110: 681-692.
- SHEETZ, M.P., R. VALE, B. SCHNAPP, T. SCHROER and T. REESE (1987). Movements of vesicles on microtubules. In *Cellular and Molecular Biology of Hormone- and Neurotransmitter-Containing Secretory Vesicles*. R.G. Johnson (ed.), *Ann. N.Y. Acad. Sci.* 493: 409-416.
- SHIMIZU, T. (1990). Polar body formation in *Tubifex* eggs. In *Cytokinesis. Mechanisms of Furrow Formation during Cell Division*. G.W. Conrad and T.E. Schroeder (eds), *Ann. N.Y. Acad. Sci.* 582: 260-272.
- SHPETNER, H.S. and R.B. VALLEE (1989). Identification of dynamin, a novel mechanochemical enzyme that mediates interactions between microtubules. *Cell* 59: 421-432.
- SIEGFRIED, E., L.A. PERKINS, T.M. CAPACI and N. PERRIMON (1990). Putative protein kinase product of the *Drosophila* segment-polarity gene *zeste-white3*. *Nature* 345: 825-828.
- SIEVERS, A. and L. HEYDER-CASPERS (1983). The effect of centrifugal accelerations on the polarity of statocytes and on the graviperception of cress roots. *Planta* 157: 64-70.
- SINGER, S.J. (1990). The structure and insertion of integral proteins in membranes. *Ann. Rev. Cell Biol.* 6: 247-296.
- SLACK, J. (1991). Molecule of the moment. *Nature* 349: 17-18.
- SMITH, F.A. and S.E. SMITH (1989). Membrane transport at the biotrophic interface: an overview. *Australian J. Plant Physiol.* 16: 33-43.
- SOKOLIC, A.I. and V.M. YURIN (1986). Potassium channels in plasmalemma of *Nitella* cells at rest. *J. Membr. Biol.* 89: 9-22.
- SOMMER, H., J.-P. BELTRAN, P. HUIJSER, H. PAPE, W.-E. LONNIG, H. SAEDLER and S. SCHWARZ-SOMMER (1990). Deficiens, a homeotic gene involved in the control of flower morphogenesis in *Antirrhinum majus*: the protein shows homology to transcription factors. *EMBO J.* 9: 605-614.
- ST JOHNSTON, D., W. DRIEVER, T. BERLETH, S. RICHSTEIN and C. NÜSSLEIN-VOLHARD (1989). Multiple steps in the localization of bicoid RNA to the anterior pole of the *Drosophila* oocyte. *Development* 107 (Suppl.): 13-19.
- ST LEGER, R.J., T.M. BUTT, R.C. STAPLES and D.W. ROBERTS (1990). Second messenger involvement in differentiation of the entomopathogenic fungus *Metarhizium anisopliae*. *J. Gen. Microbiol.* 136: 1779-1789.
- STADLER, H. (1987). The proton pump of synaptic vesicles. In *Cellular and Molecular Biology of Hormone- and Neurotransmitter-Containing Secretory Vesicles*. R.G. Johnson (ed.), *Ann. N.Y. Acad. Sci.* 493: 264.
- STEER, M. (1991). Endomembrane systems. *Progr. Bot.* 52: 10-18.
- STEPHENS, P.W. and A.I. GOLDMAN (1991). The structure of quasicrystals. *Sci. Amer.* 264(4): 24-31.
- STEWARTSAVAGE, J., R.D. GREY and R.P. ELINSON (1991). Polarity of the surface and cortex of the amphibian egg from fertilization to 1st cleavage. *J. Electron Microsc. Techn.* 17: 369-383.
- STONE, J.L. (ed.) (1984). Monopole '83. NATO ASI series; series B: Physics, vol. 111. Plenum Press, New York, London. 699 pp.
- STORNAIUOLO, A. *et al.* (1990). Human HOX genes are differentially activated by retinoic acid in embryonal carcinoma cell according to their position within the four loci. *Cell Differ. Develop.* 31: 119-127.
- STRAUB, F.B. (1942). Studies. *University of Szeged* II: 3-15.

- STREHLER, E.E. (1991). Recent advances in the molecular characterization of plasma membrane Ca^{2+} pumps. *J. Membrane Biol.* 120: 1-15.
- SUCHER, J. (1978). Magnetic dipole transitions in atomic and particle physics: ions and pions. Physics publication N° 78-196. Univ. Maryland Press.
- TAKEICHI, M. (1991). Cadherin cell adhesion receptors as a morphogenetic regulator. *Science* 251: 1451-1455.
- TARTAKOFF, A.M. (1983). Perturbation of vesicular traffic with the carboxylic ionophore monensin. *Cell* 32: 1026-1028.
- TEMPERLI, E., U.-P. ROOS and H.R. HOHL (1990). Actin and tubulin cytoskeletons in germlings of the oomycete fungus *Phytophthora infestans*. *Eur. J. Cell Biol.* 53: 75-88.
- THOM, R. (1972). Stabilité Structurale et Morphogénèse. Benjamin, New York.
- TIMMERS, A.C.J., A.M. DE VRIES and J.H.N. SCHEL (1989). Distribution of membrane-bound calcium and activated calmodulin during somatic embryogenesis of carrot (*Daucus carota* L.). *Protoplasma* 153: 24-29.
- TIWARI, S.C. and V.S. POLITO (1988a). Spatial and temporal organization of actin during hydration, activation and germination of pollen in *Pyrus communis* L.: a population study. *Protoplasma* 147: 5-15.
- TIWARI, S.C. and V.S. POLITO (1988b). Organization of the cytoskeleton in pollen tubes of *Pyrus communis*: a study employing conventional and freeze-substitution electron microscopy, immunofluorescence and rhodamine-phalloidin. *Protoplasma* 147: 100-112.
- TIWARI, S.C. and V.S. POLITO (1990a). An analysis of the role of actin during pollen activation leading to germination in pear (*Pyrus communis* L.): treatment with cytochalasin D. *Sex Plant Reprod.* 3: 121-129.
- TIWARI, S.C. and V.S. POLITO (1990b). The initiation and organization of microtubules in germinating pear (*Pyrus communis* L.) pollen. *Eur. J. Cell Biol.* 53: 384-389.
- TRAUB, P. (1985). Intermediate Filaments: A Review. Springer-Verlag. 266 pp.
- TRIFARO, J.M. and S. FOURNIER (1987). Calmodulin and the secretory vesicle. In *Cellular and Molecular Biology of Hormone- and Neurotransmitter-Containing Secretory Vesicles*. R.G. Johnson (ed.), *Ann. N.Y. Acad. Sci.* 493: 417-434.
- TRIFARO, J.M., M.F. BADER and J.-P. DOUCET (1985), in Trifaró and Fournier (1987) *Can. J. Biochem. Cell Biol.* 63: 661-
- TRUNECEK, V. (1965-1967). Unipolar highfrequency discharges. *Fol. Fac. Sci. Nat. Univ. Purkynianae Brunensis, Physica*, 3, Brno.
- TSIEN, R.W. and R.Y. TSIEN (1990). Calcium channels, stores, and oscillations. *Ann. Rev. Cell Biol.* 6: 715-760.
- TURIAN, G. (1989). Polarity. From Dipoles to Biopolarizations. *Arch. Sci. Genève* 42(1): 1-323.
- (1990). Polarity. From Dipoles to Biopolarizations. II. Addenda and Indexes. *Arch. Sci. Genève*, suppl. 42(1): 325-397.
- TURIAN, G. and B. FAVRE (1990). Calcium- and phospholipid-dependent protein and lipid kinases in *Neurospora crassa*. In *Calcium as an Intracellular Messenger in Eucaryotic Microbes*. Pp. 165-191. D.H. O'Day (ed.), Amer. Soc. Microbiol., Washington, D.C. 418 pp.
- UYEDA, T.Q.P. and M. FURUYA (1990). Regulation of microfilamentous cytoskeleton by calcium in flagellates of *Physarum polycephalum*. In *Calcium as an Intracellular Messenger in Eucaryotic Microbes*. Pp. 212-227. D.H. O'Day (ed.), Amer. Soc. Microbiol., Washington, D.C. 418 pp.
- VALE, R.D. (1991). Severing of stable microtubules by a mitotically activated protein in *Xenopus* egg extracts. *Cell* 64: 827-839.
- VALE, R.D. and L.S.B. GOLDSTEIN (1990). One motor, many tails: an expanding repertoire of force-generating enzymes. *Cell* 60: 883-885.
- VALE, R.D. and Y.Y. TOYOSHIMA (1989). In vitro motility assays for kinesin and dynein. In *Cell Movement: Kinesin, Dynein, and Microtubule Dynamics*, vol. 2, pp. 287-294. F.D. Warner and J.R. McIntosh (eds), Alan R. Liss, New York.

- VALE, R.D., B.J. SCHNAPP, T. MITCHISON, E. STEUER, T.S. REESE and M.P. SHEETZ (1985). Different axoplasmic proteins generate movement in opposite directions along microtubules in vitro. *Cell* 43: 623-632.
- VALLEE, R.B. and H.S. SHPETNER (1990). Motor proteins of cytoplasmic microtubules. *Ann. Rev. Biochem.* 59: 909-932.
- VAN DE MORTEL, J.B.J., D. MULDER, H. KORTHOUT, A.P.R. THEUVENET and G.W.F.H. BORST-PAUWELS (1988). Transient hyperpolarization of yeast by glucose and ethanol. *Biochim. Biophys. Acta* 936: 421-428.
- VAN DUJN, B., S.A. VOGELZANG, D.L. YPEY, L.G. VAN DER MOLEN and P.J.M. VAN HAASSTERT (1990). Normal chemotaxis in *Dictyostelium discoideum* cells with a depolarized plasma membrane potential. *J. Cell Sci.* 95: 177-183.
- VANDEN DRIESSCHE, T. (1990). Calcium as a second messenger in *Acetabularia*: calmodulin and signal transduction pathways. In *Calcium as an Intracellular Messenger in Eucaryotic Microbes*. Pp. 278-300. D.H. O'Day (ed.), Amer. Soc. Microbiol., Washington, D.C. 418 pp.
- VIRGIN, H.I. (1990). The light-induced unrolling of the grass leaf. A study of polarity, light-piping and stimulus transmission. *Physiol. Plant.* 80: 143-147.
- VON BAEYER, H.C. (1990). Dead Ringer. *The Sciences* July/Aug.: 2-4.
- VON HEIJNE, G. (1986). The distribution of positively charged residues in bacterial inner membrane protein correlates with the trans-membrane topology. *EMBO J.* 5: 3021-3027.
- WADA, A. (1976). The alpha-helix as an electric macro-dipole. *Adv. Biophys.* 9: 1-63.
- WADA, M. and A. KADOTA (1989). Photomorphogenesis in lower green plants. *Ann. Rev. Plant Physiol. Plant Mol. Biol.* 40: 169-191.
- WALL, R. (1990). This Side Up. Spatial Determination in the Early Development of Animals. Cambridge Univ. Press, New York. 436 pp.
- WANDINGER-NESS, A. and K. SIMONS (1990). The polarized transport of surface proteins and lipids in epithelial cells. In *Intracellular Trafficking of Proteins*. J. Hanover and C. Steer (eds), Cambridge Univ. Press.
- WANEK, N., D.M. GARDINER, K. MUNEOKA and S.V. BRYANT (1991). Conversion by retinoic acid of anterior cells into ZPA cells in the chick wing bud. *Nature* 350: 81-83.
- WANG, M., J.H. ROELFSEMA, J.G. WILLIAMS and P. SCHAAP (1990). Cytoplasmic acidification facilitates but does not mediate DIF-induced prestalk gene expression in *Dictyostelium discoideum*. *Dev. Biol.* 140: 182-188.
- WARNER, F.D. (1989). Perspective. Dynein subunit behavior and enzyme activity. In *Cell Movement: The Dynein ATPases*. Vol. 1, pp. 111-119. F.D. Warner, P. Satir and I.R. Gibbons (eds), Alan R. Liss, New York. 337 pp.
- WARRIOR, R. and M. LEVINE (1990). Dose-dependent regulation of pair-rule stripes by *gap* proteins and the initiation of segment polarity. *Development* 110: 759-767.
- WATSON, A.J., C.H. DAMSKY and G.M. KIDDER (1990). Differentiation of an epithelium: factors affecting the polarized distribution of Na⁺, K⁺-ATPase in mouse trophectoderm. *Develop. Biol.* 141: 104-114.
- WEISS, J. and M.H. WEISENSEELE (1990). Blue light-induced changes in membrane potential and intracellular pH of *Phycomyces* hyphae. *J. Plant Physiol.* 136: 78-85.
- WEISSENFELS, N., D. WACHTMANN and W. STOCKEM (1990). The role of microtubules for the movement of mitochondria in pinacocytes of fresh-water sponge (*Spongillidae*, *Porifera*). *Eur. J. Cell Biol.* 52: 310-314.
- WENDT, M. and A. SIEVERS (1985). Restitution of polarity in statocytes from roots of *Lepidium sativum* L. after centrifugation. *Ann. Meet. Belgian and German Soc. Cell Biol. Polarity - transport - skeleton*. *Eur. J. Cell Biol. Suppl.* 7 (vol. 36): 72.
- WESSELS, D., N.A. SCHROEDER, E. VOSS, A.L. HALL, J. CONDEELIS and D.R. SOLL (1989). cAMP-mediated inhibition of intracellular particle movement and actin reorganization in *Dictyostelium*. *J. Cell Biol.* 109: 2841-2851.

- WETLAUFER, D.B. (1990). Nucleation in protein folding - confusion of structure and process. *Trends Biochem. Sci.* 15: 414-415
- WHITE, J. (1988). In *The Nematode Caenorhabditis elegans*. Pp. 81-122. W.B. Wood (ed.), Cold Spring Harbor Lab., New York.
- WHITMAN, L.J., J.A. STROSCIO, R.A. DRAGOSET and R.J. CELOTTA (1991). Manipulation of adsorbed atoms and creation of new structures on room-temperature surfaces with a scanning tunneling microscope. *Science* 251: 1206-1210.
- WIGGINS, P.M. (1990). Role of water in some biological processes. *Microbiol. Rev.* 54: 432-449.
- WIJMAN, J.G. (1984). Synthetic membranes: on the mechanism of formation of membranes and the concentration polarization phenomenon in ultrafiltration. Thesis. Enschede. 219 pp.
- WILKINSON, P.C. (1990). The concept of chemotaxis: locomotion and chemotaxis of leukocytes. *Eur. J. Cell Biol. Suppl.* 31 (vol. 53): 57.
- WOLPERT, L. (1989). Positional information revisited. *Development* 107 (Suppl.): 3-12.
- (1990). Signals in limb development: STOP, GO STAY and POSITION. *J. Cell Sci. Suppl.* 13: 199-208.
- WOOD, W.B. (ed.) (1988). *The Nematode Caenorhabditis elegans*. Cold Spring Harbor, N.Y. 667 pp.
- WOOD, W.B. (1991). Evidence from reversal of handedness in *C. elegans* embryos for early cell interactions determining cell fates. *Nature* 349: 536-538.
- WORDEMAN, L. and W.Z. CANDE (1990). Cytokinesis by furrowing in diatoms. In *Cytokinesis. Mechanisms of Furrow Formation during Cell Division*. G.W. Conrad and T.E. Schroeder (eds), *Ann. N.Y. Acad. Sci.* 582: 252-259.
- WU, C.F. (1957). In Hunter, 1991.
- WURSTER, B. and R.R. KAY (1990). New roles for DIF? Effects on early development in *Dictyostelium*. *Dev. Biol.* 140: 189-195.
- YAMADA, T., M. PLACZEK, H. TANAKA, J. DODD and T.M. JESSELL (1991). Control of cell pattern in the developing nervous system: polarizing activity of the floor plate and notochord. *Cell* 64: 635-647.
- YAMANE, K. and S. MIZUSHIMA (1988). Introduction of basic amino acid residues after the signal peptide inhibits protein translocation across the cytoplasmic membrane of *Escherichia coli*. Relation to the orientation of membrane proteins. *J. Biol. Chem.* 263: 19690-19696.
- YANG, F., M. DEMMA, V. WARREN, S. DHARMAWARDHANE and J. CONDEELIS (1990). Identification of an actin-binding protein from *Dictyostelium* as elongation factor 1a. *Nature* 347: 494-496.
- YANOFSKY, M.F., H. MA, J.L. BOWMAN, G.N. DREWS, K.A. FELDMANN and E.M. MEYEROWITZ (1990). The protein encoded by the *Arabidopsis* homeotic gene *agamous* resembles transcription factors. *Nature* 346: 35-39.
- YISRAELI, J.K., S. SOKOL and D.A. MELTON (1989). The process of localizing a maternal messenger RNA in *Xenopus* oocytes. *Development* 107 (Suppl.): 31-36.
- YOKOYAMA, K., H. KAJI, K. NISHIMURA and M. MIYAJI (1990). The role of microfilaments and microtubules in apical growth and dimorphism of *Candida albicans*. *J. Gen. Microbiol.* 136: 1067-1075.
- YOOL, A.J. and T.L. SCHWARZ (1991). Alteration of ionic selectivity of a K⁺ channel by mutation of H5 region. *Nature* 349: 700-703.

