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Autor: Landolt, Elias

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Bibliographie der Familie der *Lemnaceae*

von

Elias LANDOLT

Die nachfolgende Zusammenstellung umfasst neben der in der Studie von LANDOLT (1981) zitierten Literatur weitere Titel von Arbeiten, die mit Lemnaceen unternommen wurden, die aber entweder zu spezielle Probleme behandeln oder mir nicht zugänglich waren und deshalb nicht konsultiert werden konnten. Die Literatur von Arbeiten über oder mit Lemnaceen ist gegenwärtig derart umfangreich und unübersichtlich, dass die Bibliographie nicht vollständig sein kann. Auch wurde die ältere Literatur teilweise weggelassen. Für ältere physiologische Literatur wird auf HILLMAN (1961), für zytologische Literatur auf URBANSKA-WORYTKIEWICZ (1980) und für soziologische Literatur auf TÜXEN (1971) und SCHWABE-BRAUN und TÜXEN (1981) verwiesen. Von der floristischen Literatur wurden jene Werke aufgenommen, auf die in der monographischen Studie (LANDOLT 1981) hingewiesen wird.

Wenn ein Titel einer Arbeit in Klammern steht, ist die Originalsprache der Publikation in einer anderen Sprache geschrieben und nur die Zusammenfassung in der Sprache des Titels. Im allgemeinen wurden die Titel westeuropäischer Sprachen im Original wiedergegeben, ebenso zumeist die Titel aller jener Arbeiten, die keine Zusammenfassung in Deutsch, Französisch oder Englisch enthalten.

- ABDULAYEF D.A., 1969: (The use of common duckweed as green feed for chickens). Russ. Uzbekskii Biol. Zourn. (USSR) 13, 42 ff.
- AGAMI M., LIATAV M. und WAISEL Y., 1976: The effects of various components of water pollution on the behaviour of some aquatic macrophytes of the coastal rivers of Israel. Aquat. Bot. 2, 203-213.
- ALIKUNHI K.H., RAMCHADRAN V. und CHAUDHURI H., 1952: On the role of duckweed (*Lemna minor*) in the preparation of crop nurseries. Sci. Cult. (Calcutta) 17, 436-437.
- ALLENBY K.G., 1968: Some analyses of aquatic plants and waters. Hydrobiologia 32, 486-490.
- ALLISON F.E., LOVE K.S., PINCK L.A. und GADDY V.L., 1948: Gaseous losses of nitrogen from green plants. I. Studies with *Chlorella* and *Lemna*. Plant Physiol. 23, 496-504.
- ALMQVIST E., 1929: Upplands vegetation och flora. Acta Phytogeogr. Suedica 1. 622 S.
- AL-SHALAN I. und KANDELER R., 1978: Tageslängenabhängigkeit der Wirkung von Abscisinsäure und Benzyladenin auf das Wachstum von *Lemna gibba* G1. Biochem. Physiol. Pflanzen 172, 521-529.
- 1979: Aufnahme und Verteilung von Gibberellin A1 bei der Kurztagspflanze *Lemna paucicostata* 6746. Zeitschr. Pflanzenphys. 94, 257-262.

- AMADO R., MÜLLER-HIEMEYER R. und MARTI U., 1980: Proteingehalt, Aminosäurezusammensetzung und Neutralzuckergehalt von Lemnaceen. Vorläufige Mitteilung. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 70, 102-117.
- AMBORSKI R.L. und LARKIN J.M., 1980: Human and animal health aspects. Polykopie. Baton Rouge. 15 S.
- ANCONA H.L., 1930: *Lemna* and mosquito larvae. Inst. Biologia (Univ. Nacion. Mexico) 1, 33-37.
- ANDERSON J.L., THOMSON W.W. und SWADER J.A., 1973: Fine structure of *Wolffia arrhiza*. Can. J. Bot. 51, 1619-1622.
- ANDRES J. und SMITH H., 1976: Evidence for a rapid effect of abscisic acid on amino acid metabolism in *Lemna*. Plant. Sci. Lett. 6, 315-318.
- ANGERILLI N.P.D.C. und BEIRNE B.P., 1974: Influence of some freshwater plants on the development and survival of mosquito larvae in British Columbia. Can. J. Zool. 52, 813-815.
- ANTONIELLI M. und CAGIOTTI M.R., 1976: The availability of chlorophyllide in hydrophytes and algae of Lake Trasimeno and the variability of pigment content in *Spirogyra*. Riv. Idrobiol. 14, 3-12.
- ARBER A., 1919: On the vegetative morphology of *Pistia* and the *Lemnaceae*. Proc. Roy. Soc. 91, 96-103.
- 1920: Water plants: a study of aquatic angiosperms. Cambridge Univ. Press, 435 S.
- ARNOTT H.J. und PAUTARD P.G.E., 1970: Calcification in plants. In: SCHRAER H. (Ed.), Biological calcification. New York.
- ASCHERON P. und GRAEBNER P., 1902-1904: Synopsis der mitteleuropäischen Flora 2/2, 390-397. W. Engelmann, Leipzig.
- ASHBY E., 1929a: The interaction of factors in the growth of *Lemna*. III. The interrelationship of duration and intensity of light. Ann. Bot. 43, 333-354.
- 1929b: The interaction of factors in the growth of *Lemna*. IV. The influence of minute quantities of organic matter upon growth and reproduction. Ann. Bot. 43, 805-816.
- 1950: Leaf morphology and physiological age. Sci. Prog. No. 152, 678-685.
- BOLAS B.D. und HENDERSON F.Y., 1928: The interaction of factors in the growth of *Lemna*. I. Method and technique. Ann. Bot. 42, 771-782.
- und OXLEY T.A., 1935: The interaction of factors in the growth of *Lemna*. VI. An analysis of the influence of light intensity and temperature on the assimilation rate and the rate of frond multiplication. Ann. Bot. 49, 309-336.
- und WANGERMANN E., 1951: Study in the morphogenesis of leaves. VII. 2. Correlative effects of fronds in *Lemna minor*. New Phytol. 50, 200-209.
- und WINTER E.J., 1949: Studies in the morphogenesis of leaves. III. Preliminary observations on vegetative growth in *Lemna minor*. New Phytol. 48, 374-381.
- ASTON H.I., 1973: Aquatic plants of Australia. Melbourne Univ. Press, 368 S.
- AUSTIN C.F., 1867: *Lemnaceae*. In: GRAY A., Man. Bot., 478-480.
- 1870: *Wolffia columbiana*. Bull. Torr. Bot. Club 1, 36.
- AYADI A., DEMUYTER P. und THELLIER M., 1971: Interprétation électrocinétique des interactions compétitives réciproques K^+/Rb^+ lors de l'absorption de ces ions par la *Lemna minor*. C. R. Acad. Sci. Paris, D, 273, 67-70.

- STELZ T., MONNIER A., LASSALÖES J.P. und THELLIER M., 1974: Application of an electrokinetic formulation to the study of the effect of alkaline-earth cations on the absorption of potassium ions by *Lemna minor*. Ann. Bot. 38, 677-696.
- und THELLIER M., 1970: Formulation électrocinétique de l'effet de régulation par le calcium de l'absorption du rubidium chez la *Lemna minor*. C. R. Acad. Sci. Paris, D, 271, 1280-1283.
- BAHL J., 1971: Sur la préparation de suspensions de chloroplastes isolés de *Spirodela polyrrhiza* (L.) Schleiden. C. R. Acad. Sci. Paris, D, 272, 2185-2187.
- BAILEY D.R., 1971: Comparision of oats and *Lemna oligorrhiza* for diuron bio-assay. Queensl. J. Agric. Anim. Sci. 27, 395-400.
- BALDWIN J.D.C. und MYERS R., 1980: Duckweed harvesting and transport. Polykopie, Baton Rouge. 5 S.
- BALL G.A., BEAL E.O. und FLECKER E.A., 1967: Variation of chromatographic spot patterns of two species of clonal plants grown under controlled environmental conditions. Brittonia 19, 273-279.
- BARBECK W., 1880: On the development of *Lemna minor*. Proc. Acad. Philadelphia, 230-232.
- BARON D., WELLMANN E. und GRISEBACH H., 1972: Purification and properties of an enzyme from cell suspension cultures of parsley catalyzing the synthesis of UDP-apiose and UDP-D-xylose from UDP-D-glucoronic acid. Biochim. Biophys. Acta 258, 310-318.
- BATA J., 1973: The effect of pH, kinetin and sucrose on the branching pattern in *Lemna trisulca* L. Bull. Inst. Jard. Bot. Univ. Beograd 8, n.s., 45-52.
- und NESCIVIC M., 1974: Effect of gibberellic acid and kinetin on chlorophyll retention in *Lemna trisulca*. Zeitschr. Pflanzenphys. 73, 86-88.
- BAUER A., SCHAEFER C. und ERISMANN K.H., 1971: Zur Frage der Stickstoffinkorporation in Aminosäuren und Proteinen bei *Lemna minor* unter Photosynthesebedingungen. Verh. Schweiz. Naturf. Ges. 151, 107-109.
- SCHLUNEGGER U. und ERISMANN K.H., 1973: Untersuchungen zur Ammonium-assimilation in Aminosäuren und Proteinen bei *Lemna minor* unter Photosynthesebedingungen. Verh. Schweiz. Naturf. Ges. 153, 79-82.
- BAUER R., HUBER W. und SANKHLA N., 1976: Effect of abscisic acid on photosynthesis in *Lemna minor* L. Zeitschr. Pflanzenphys. 77, 237-246.
- BAUR R.J. und BUCK D.H., 1980: Active research on the use of duckweeds in the culture of grass carp, tilapia, and fresh water prawns. Ill. Nat. Hist. Survey, R.R.I., Kinmundy, Ill.
- BEAL E.O., 1977: A manual of marsh and aquatic vascular plants of North Carolina with habitat data. N.C. Agri. Exp. Station, Tech. Bull. 247, Raleigh, N.C., 298 S.
- BEAMS H.W., KESSEL R.G. und SHIH C.Y., 1979: Effects of ultracentrifugation on the mesophyll cells and chloroplasts of spinach (*Spinacea oleracea*) leaf and on the cells and chloroplasts of duckweed (*Lemna* sp.) plants. Bio. Cell. 35, 87-96.
- BEATSON M.E., 1955: Data for the study of postglacial history. XV. Subfossil pollen of *Lemna* in Quaternary deposit. New Phytol. 54, 208.
- BEAUMONT G., BASTIN R. und THERRIEN H.P., 1976: Effets physiologiques de l'atrazine à doses sublétales sur *Lemna minor* L. I. Influence sur la croissance, la teneur en chlorophylle, en protéines et en azote soluble et total. II. Influence sur la photosynthèse et sur la respiration. Nat. Can. 103, 527-533; 535-541.

- 1978: Effets physiologiques de l'atrazine à doses sublétale sur *Lemna minor* L. III. Influence sur les protéines solubles et les acides nucléiques. Nat. Can. 105, 103-113.
- DE BEAUVOIS, PALISOT M., 1816: Mémoire sur les *Lemna* ou lentille d'eau, sur leur fructification et sur la germination de leur grain. Jour. Phys. Chim. Hist. Nat. 82, 101-115.
- BECHERER A., 1956: Florae Vallesiacae Supplementum. Denkschr. Schweiz. Naturf. Ges. 81, 556 S.
- BECK E., 1964: Apian aus der Zellwand höherer Pflanzen. Ber. Deutsch. Bot. Ges. 77, 396-397.
- und KANDLER O., 1965: Apiose als Bestandteil der Zellwand höherer Pflanzen. Zeitschr. Naturforsch. 20b, 62-67.
- BELL W.A., 1949: Uppermost cretaceous and Paleocene floras of western Alberta. Canada Department of Mines and Resources. Geological Survey Bull. 13, 1-229.
- BENKOVÁ D., 1957: Wolffia bezkorenná (*Wolffia arrhiza* (L.)) na juznom Slovensku. Biologia 12, 460-463.
- BENNINK G.J.H., VAN DEN BERG R., KOOL H.J. und STEGWEE D., 1970: Flowering in *Lemna minor*. Acta Bot. Neerl. 19, 385-392.
- DE VRIES J.W.A., 1977: Flower development in *Lemna perpusilla* under long-day conditions with the cytokinin benzyladenine. In: KUDREV T., IVANOVA I. und KARANOV E. (Ed.): Plant Growth Regul., Proc. Int. Symp. 2nd 1975, 544-547.
- BERGAMINI P.G., PALMAS G., PIANTELLI F., SANI M., BANDITELLI P., PREVITERA M. und SODI F., 1979: Study of cesium-137 absorption by *Lemna minor*. Health Phys. 37, 315-321.
- BERTOSSI M.F., 1950: L'idrazide maleica come fitormone. Atti. Ist. Bot. Univ. Pavia ser. 5, 8, 155-166.
- BERTSCH K., 1952: *Wolffia arrhiza* in Württemberg. Jb. Ver. Vaterl. Naturkde. Württb. 107, 133-136.
- BEST P.H., PIETERSE A.H., SOEKARJO R. und DE LANGE L., 1977: A preliminary study of the internal gas composition of *Lemna gibba* L. Acta Bot. Neerl. 26, 109-113.
- VAN BEUSEKOM C.F., 1967: Ueber einige Apiose-Vorkommnisse bei den *Helobiae*. Phytochemistry 6, 573-576.
- BEZEMER-SYBRANDY S.M., 1969: Onderzoeken over cytokinins. Wisselwerking met *Lemna minor* L. Proefschrift Leiden.
- und VELDSTRA H., 1971a: Investigations on cytokinins. III. Cytokinin activity in *Lemna minor* tRNA hydrolysates. Physiol. Plant. 24, 369-373.
- 1971b: Investigations on cytokinins. IV. The metabolism of 6-benzyl-aminopurine in *Lemna minor*. Physiol. Plant. 25, 563-569.
- BHALLA P.R., PIETERSE A.H. und SABHARWAL P.S., 1973: Some aspects of flowering, gibbosity and turion formation in Lemnaceae. Acta Bot. Neerl. 22, 433-445.
- und SABHARWAL P.S., 1972: Induction of flowering in *Lemna minor* by EDDHA. Acta Bot. Neerl. 21, 200-202.
- 1974: Effects of tobacco smoke and some of its constituents on growth and flowering of *Lemna gibba* G3. Environm. Pollut. 6, 59-66.
- 1975: Induction of flowering in *Lemna gibba* G3 by aspirin. Experientia 31, 540-541.

- BHANTHUMNAVIN K. und McGARRY M.G., 1971: *Wolffia arrhiza* as a possible source of inexpensive protein. *Nature* 232 (5331), 495.
- BHAT P.K., DAGAR J.C., SINGH V.P. und MALL L.P., 1977: Studies on interspecific association of aquatic plants. *Biologia (Lahore)* 23, 117-124.
- BIELESKI R.L., 1968a: Levels of phosphate in *Spirodela*. *Plant Physiol.* 43, 1297-1308.
- 1968b: Effect of phosphorous deficiency on levels of phosphorous compounds in *Spirodela*. *Plant Physiol.* 43, 1309-1316.
- BIERHUIZEN J.F., 1954: Observations on potassium deficiency in *Lemna minor* L. *Meded. Landbouwhogeschool Wageningen* 54, 311-319.
- BISCOE T.D., 1873: The winter state of our duckweeds. *Am. Nat.* 7, 257-268.
- BITCOVER E.H. und SIELING D.H., 1951: Effect of various factors on the utilization of nitrogen and iron by *Spirodela polyrrhiza* (L.) Schleid. *Plant Physiol.* 26, 290-303.
- BLACK J.M., 1978: Flora of South Australia. In: JESSOP J.P. (Ed.): *Lemnaceae*. 3. Aufl. Adelaide. 304-306.
- BLACKBURN K.B., 1933: Notes on chromosomes of the duckweeds (*Lemnaceae*) introducing the question of chromosome size. *Proc. Univ. Durham Phil. Soc.* 9, 84-90.
- BLACKMAN G.E., 1952: Studies in the principles of phototoxicity. I. The assessment of relative toxicity. *J. Exp. Bot.* 3, 1-27.
- und ROBERTSON-CUNNINGHAME R.C., 1953: The influence of pH on the phototoxicity of 2:4 dichlorophenoxyacetic acid to *Lemna minor*. *New Phytol.* 52, 71-76.
- 1954: Interactions in the physiological effects of growth substances on plant development. *J. Exp. Bot.* 5, 184-203.
- 1955: Interrelationship between light intensity, temperature, and the physiological effects of 2,4-dichlorophenoxyacetic acid on the growth of *Lemna minor*. *J. Exp. Bot.* 6, 156-176.
- und SARGENT J.A., 1959: The uptake of growth substances. II. The absorption and accumulation of 2:3:5-triiodobenzoic acid by the root and frond of *Lemna minor*. *J. Exp. Bot.* 10, 480-503.
- SENN G., BURCH W.R. und POWELL R.G., 1959: The uptake of growth substances. I. Factors controlling the uptake of phenoxyacetic acids by *Lemna minor*. *J. Exp. Bot.* 10, 33-54.
- BLACKWOOD G.C. und LEAVER C.J., 1977: The effect of light on protein synthesis in green leaves. *Colloq. Int. C.N.R.S.* 1976, 261, 611-615.
- BLAKE C.H., 1938: *Wolffiella floridana* in Massachusetts. *Rhodora* 40, 76.
- BLAKE S.F., 1933: *Wolffiella lingulata* in Louisiana. *Rhodora* 35, 226.
- 1952: *Wolffia papulifera* in Texas. *Rhodora* 54, 306-307.
- BLATTER E. und HALLBERG C., 1921: Species novae Indiae Orientalis. *J. Ind. Bot.* 2, 49-50.
- BLAZEY E.B. und McCLURE J.W., 1968: The distribution and taxonomic significance of lignin in *Lemnaceae*. *Am. J. Bot.* 55, 1240-1245.
- BLODGETT F.H., 1914: Development of the embryo and the germination in *Lemna perpusilla*. *Science* 39, 292.
- 1915: Morphology of the *Lemna* frond. *Bot. Gaz.* 60, 383-390.
- 1923: The embryo of *Lemna*. *Am. J. Bot.* 10, 336-342.
- BLÜTHGEN J., 1964: Allgemeine Klimageographie. Verlag Walter De Gruyter, Berlin, 599 S.

- BOLLARD E.G., 1966: A comparative study of the ability of organic nitrogenous compounds to serve as sole sources of nitrogen for the growth of plants. *Plant and Soil* 25, 153-166.
- COOK A.R. und TURNER N.A., 1968: Urea as a sole source of nitrogen for plant growth. I. The development of urease activity in *Spirodela oligorhiza*. *Planta* 83, 1-12.
 - BORNKAMM R., 1964: Zur Oxalatsynthese von *Lemna minor* L. unter verschiedenen Anzuchtbedingungen. Vorläufige Mitteilung. *Ber. Deutsch. Bot. Ges.* 77, 187-193.
 - 1965: Die Rolle des Oxalats im Stoffwechsel höherer grüner Pflanzen. Untersuchungen an *Lemna minor* L. *Flora, Abt. A*, 156, 139-171.
 - 1966: Ein Jahresrhythmus des Wachstums bei *Lemna minor* L. *Planta* 69, 178-186.
 - 1970: Ueber den Einfluss der Konkurrenz auf die Substanzproduktion und den N-Gehalt der Wettbewerbspartner. *Flora* 159, 84-104.
 - 1970a: Dunkel-Assimilation von Nitrat bei *Lemna minor* L. *Planta* 92, 50-56.
 - BORSTLAP A.C., 1970: Antagonistic effects of branched chain amino acids on the growth of *Spirodela polyrhiza* (L.) Schleiden. *Acta Bot. Neerl.* 19, 211-215.
 - 1972: Changes in the free amino acids of *Spirodela polyrhiza* (L.) Schleiden during growth inhibition by L-valine, L-isoleucine, or L-leucine. A gas chromatographic study. *Acta Bot. Neerl.* 21, 404-416.
 - 1974: Antagonism between amino acids in the growth of *Spirodela polyrhiza* due to competitive amino acid uptake. *Acta Bot. Neerl.* 23, 723-738.
 - 1977: Kinetics of the uptake of some neutral amino acids by *Spirodela polyrhiza*. *Acta Bot. Neerl.* 26, 115-128.
 - BÖSZÖRMENYI E., 1955: (Contributions to the mineral nutrition of *Lemna minor*) *Ung. Diss. Budapest.*
 - und BÖSZÖRMENYI Z., 1957: N and P nutrition and the physiological age of *Lemna minor* L. *Acta Bot. Acad. Sci. Hung.* 3, 1-7.
 - BOTTOMLEY W.B., 1914: Some accessory factors in plant growth and nutrition. *Proc. Roy. Soc. B.* 87, 237-247.
 - 1917: Some effect of organic growth promoting substances (auximones) on the growth of *Lemna minor* in mineral culture solutions. *Proc. Roy. Soc. London B* 89, 481-507.
 - 1919: The effect of nitrogen-fixing organisms and nucleic acid derivatives on plant growth. *Proc. Roy. Soc. B.* 91, 83-95.
 - 1920a: The growth of *Lemna* plants in mineral solution and in their natural media. *Ann. Bot.* 34, 345-352.
 - 1920b: The effect of organic matter on the growth of various water plants in culture solution. *Ann. Bot.* 34, 353-367.
 - BOUDET A., HUMPHREY T.J. und DAVIES D.D., 1975: The measurement of protein turnover by density labelling. *Biochem. J.* 152, 409-416.
 - BOWEN H.J.M., 1958: Variation in *Lemna gibba*. *Proc. B.S.B.I.* 3, 86-88.
 - BOWMAN C. und DYER T.A., 1979: 4.5S RNA, a novel ribosome component in the chloroplasts of flowering plants. *Biochem. J.* 183, 605-614.
 - BOYD C.E., 1968: Fresh-water plants: a potential source of protein. *Econ. Bot.* 22, 359-368.
 - BRÄNDLE R. und ERISMANN K.H., 1968: Photosynthese-abhängige Sulfidaufnahme grüner Pflanzen. *Naturwissenschaften* 55, 41.

- STÖCKLI B. und ERISMANN K.H., 1975: Beeinflussung der Thymidinphosphorylierung und Inkorporation durch Schwefeldioxid und Sulfit bei der Wasserlinse (*Lemna minor* L.). *Experientia* 31, 511-513.
- STRASSER R. und ERISMANN K.H., 1968: Intermediärprodukte der H₂S-Assimilation bei *Lemna minor* L. *Verh. Schweiz. Naturf. Ges.* 148, 122-124.
- BRAUN-BLANQUET J. und RÜBEL E., 1932-1935: Flora von Graubünden. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 7, 1695 S.
- BRAVO H., 1930: Las Lemnaceas del valle de Mexico. *An. Inst. Biologia (Mexico)* 1, 7-32.
- BREHM V., 1935: Die Organismenwelt der Wasserlinsenteppiche. *Mikrokosmos* 28, 109.
- BRÖCKER E., 1936: Ueber eine *Lemna* mit regelmässig homodromer und antidromer Verzweigung. *Flora NF* 30, 438-440.
- BRONGNIART A., 1833: Notes sur la structure du fruit des *Lemnacées*. *Arch. Bot.* 2, 97-104.
- BROOKS J.S., 1940: The cytology and morphology of the *Lemnaceae*. Ph.D. thesis, Cornell University.
- BROOKS R.E. und HAUSER L.A., 1978: Aquatic vascular plants in Kansas I: Submersed and floating leaved plants. *Tech. Publ. State Biol. Surv. Kansas* 7, 70 S.
- und MC GREGOR R.L., 1979: New records and notes on the vascular flora of Kansas for 1978. *Tech. Publ. State Biol. Surv. Kansas* 8, 87-92.
- VAN BRUGGEN T., 1976: The vascular plants of South Dakota. The Iowa State Univ. Press, Ames, U.S.A., 123.
- BRUNAUD A., 1974: Organisation de la pousse végétative d'une Lemnacée: *Spirodela polyrrhiza* (L.) Schleid. *C.R. Acad. Sci. Paris, D*, 278, 1183-1186.
- BRUNOLD C., 1972: Regulation der Sulfataufnahme und der Sulfatassimilation durch Schwefelwasserstoff. *Diss. Univ. Bern.*
- und ERISMANN K.H., 1968: Der Mechanismus der Photosynthesehemmung durch Acetat bei *Lemna minor*. *Verh. Schweiz. Naturf. Ges.* 148, 124-125.
- 1970: Die Hemmung der Sulfataufnahme durch H₂S bei *Lemna minor*. *Verh. Schweiz. Naturf. Ges.* 150, 238-239.
- 1972: H₂S als Schwefelquelle bei *Lemna minor* L. *Verh. Schweiz. Naturf. Ges.* 152, 145-147.
- 1974: H₂S als Schwefelquelle bei *Lemna minor* L.: Einfluss auf das Wachstum, den Schwefelgehalt und die Sulfataufnahme. *Experientia* 30, 465-467.
- 1975: H₂S as sulfur source in *Lemna minor* L. II. Direct incorporation into cyteine and inhibition of sulfate assimilation. *Experientia* 31, 508-510.
- 1976: Sulfur dioxide as a sulfur source in duckweeds (*Lemna minor* L.). *Experientia* 32, 296-297.
- und SCHMIDT A., 1976: Regulation of adenosine-5'-phosphosulfate sulfotransferase activity by H₂S in *Lemna minor* L. *Planta* 133, 85-88.
- 1978: Regulation of sulfate assimilation in plants. 7. Cysteine inactivation of adenosine-5'-phosphosulfate sulfotransferase in *Lemna minor* L. *Plant Physiol.* 61, 342-347.
- BUCKLE D. und RALPH R.K., 1977: Control of growth of *Spirodela oligorrhiza* in darkness. *Plant Sci. Lett.* 9, 347-350.
- BYTNIEWSKA K., 1980: Amino acid composition and biological value of proteins in some aquatic plant species. *Biochem. Physiol. Pflanzen* 175, 172-175.
- CADEVALL J., 1933: Flora de Catalunya, Bd. V. Barcelona. 396-398.

- CALDWELL O.W., 1899: On the life history of *Lemna minor*. Bot. Gaz. 27, 37-66.
- CAMP W.H., 1933: Distribution and Flowering in *Wolffia papulifera*. Ohio J. Sci. 33, 163.
- CASPERSON G., 1956: Wärmehaushaltstudien an Wasserpflanzen. Ber. Deutsch. Bot. Ges. 69, 479-486.
- CEDENO-MALDONADO A. und LIU L.C., 1976: Effect of two substituted urea and two s-triazine type herbicides on the photosynthesis of *Lemna perpusilla* Torr. J. Agric. Univ. Puerto Rico 60, 369-374.
- und DELGADO L., 1979: Effect of photosynthetic inhibitor herbicides on nitrate reductase activity of non-target species. J. Agric. Univ. Puerto Rico 63, 412-414.
- CESKA A. und CESKA O., 1979: Additions to the flora of British Columbia. Can. Field-Nat. 94, 69-74.
- CHANG S.-M., YANG C.-C. und SUNG S.-C., 1977: The cultivation and nutritional value of Lemnaceae. Bull. Inst. Chem. Acad. Sin. 24, 19-30.
- 1978: Effects of plant hormones on the cultivation and chemical composition of Lemnaceae. Bull. Inst. Chem. Acad. Sin. 25, 19-34.
- CHANG W.-C. und CHIU P.-L., 1976: Induction of callus from fronds of duckweed (*Lemna gibba* L.). Bot. Bull. Acad. Sin. (Taipeh) 17, 106-109.
- 1978: Regeneration of *Lemna gibba* G₃ through callus culture. Zeitschr. Pflanzenphys. 89, 91-94.
- 1978: Callus formation and regeneration of frond-like structures in *Lemna perpusilla* 6746 in a defined medium. Plant Sci. Lett. 13, 133-136.
- CHAO T.-F., 1952: A study of phytotoxine action of 2,4 dichlorophenoxyacetic acid on certain aquatic plants. Diss. Univ. of Michigan.
- CHAPMAN K.S.R., TREWAVAS A. und VAN LOON L.C., 1975: Regulation of the phosphorylation of chromatin-associated proteins in *Lemna* and *Hordeum*. Plant Physiol. 55, 293-396.
- CHECHENKIN M.N., 1955: The distribution of high saturated fatty acids in the fats of fresh water plants. Biokhimiya 20, 249-250.
- CHEN S.S.C. und PARK W.-M., 1976: Dual effects of abscisic acid on the growth of a duckweed. Taiwania 21, 50-51.
- CHIU M.M. und FALK R.H., 1975: Ultrastructural study on *Lemna perpusilla*. Cytologia 40, 313-322.
- CHOMHALOW N., 1971: Miracle Plant. Agric. Sci. (Thai Agric. Sci. Assoc., Bangkok) 4 (4), 319-330.
- CHUA S.E. und DICKSON M.H., 1964: The effect of flashing light supplemented by continuous red and far-red light on the growth of *Lemna minor* L. in the presence of growth regulators. Canad. J. Bot. 42, 57-64.
- CIFFERI R. und CIFFERI F., 1949: Effetto di alcune metilcumarine sul teste moltiplicazione fronde di *Lemna*. Atti Ist. Bot. Univ. Lab. Crittogamico Pavia Ser. 5, 3, 322-325.
- CLAPHAM A.R., TUTIN T.G. und WARBURG E.F., 1962: Flora of the British Isles. Cambridge Univ. Press, 1052-1054.
- CLARK N.A., 1925: The rate of reproduction of *Lemna major* as a function of intensity and duration of light. J. Phys. Chem. 29, 935-941.
- 1926: Plant growth promoting substances, hydrogenic concentration and the reproduction of *Lemna*. Plant Physiol. 1, 273-279.
- 1932: Technique for the growth of *Lemna* under sterile conditions with controlled temperature and light. Iowa State Coll. J. Sci. 7, 13-16.

- und FLY C.L., 1930: The role of manganese in nutrition of *Lemna*. *Plant Physiol.* 5, 241-248.
- 1933: Manganese and the growth of *Lemna*. *Plant Physiol.* 8, 157-163.
- und FRAHM E.E., 1940a: Influence of auxins on reproduction of *Lemna major*. *Plant Physiol.* 15, 735-741.
- 1940b: The effect of various growth promoting substances on the reproduction of *Lemna*. *Proc. Iowa Acad. Sci.* 47, 239-247.
- und ROLLER E.M., 1931: The stimulation of *Lemna major* by organic matter under sterile and nonsterile conditions. *Soil Sci.* 31, 299-309.
- THOMAS B.A. und FRAHM E.E., 1938: The formation of Vitamins A, B and C in *Lemna* grown in the absence of organic matter. *Iowa State Coll. J. Sci.* 13, 9-16.
- CLATWORTHY J.N. und HARPER J.L., 1962: The comparative biology of closely related species living in the same area. V. Inter- and intraspecific interference within cultures of *Lemna* ssp. and *Salvinia natans*. *J. Exp. Bot.* 13, 307-324.
- CLAUS W.D., 1972: Lifespan and budding potential of *Lemna* as a function of age of the parent - a genealogic study. *New Phytol.* 71, 1081-1096.
- CLAVAND A., 1878: Sur une particularité du *Lemna trisulca* L. *Actes Soc. Linn. Bordeaux* 31, 309-311.
- CLELAND C.F., 1973: The influence of salicylic acid on flowering and growth in the long-day plant *Lemna gibba* G₃. In: BIELESKI R.L., FERGUSON A.R. und GRESSWELL M.M. (ed.), Mechanism of regulation of plant growth. *Int. Plant Physiol. Symp.*, Palmerston North, N.Z.
- 1974a: Isolation of salicylic acid from aphid honeydew and its effect on flowering. *Plant Growth Subst.*, Proc. Int. Conf. 8th, 1973, Hirokawa Publ. Co. Inc. Tokyo. 119-125.
- 1974b: Isolation of flower-inducing and flower-inhibitory factors from aphid honeydew. *Plant Physiol.* 54, 899-903.
- 1977: Influence of photoperiod on induction of flowering by salicylic acid in *Lemna*. *Plant Physiol.* 59, suppl. 47.
- 1979: Comparison on the flowering behavior of the long-day plant *Lemna gibba* G₃ from different laboratories. *Plant Cell Physiol.* 20, 1263-1271.
- und AJAMI A., 1974: Identification of the flower-inducing factor isolated from aphid honeydew as being salicylic acid. *Plant Physiol.* 54, 904-906.
- und BRIGGS W.R., 1967: Flowering responses on the long-day plant *Lemna gibba* G₃. *Plant Physiol.* 42, 1553-1561.
- 1968: Effects of low-intensity red and far-red light and high-intensity white light on the flowering response of the long-day plant *Lemna gibba* G₃. *Plant Physiol.* 43, 157-162.
- und TANAKA O., 1979: Effect of day-length on the ability of salicylic acid to induce flowering in the long-day plant *Lemna gibba* G₃ and the short-day plant *Lemna paucicostata* 6746. *Plant Physiol.* 64, 421-424.
- COCHRAN L.C. und NELSON R., 1933: Observations on the distribution and flowering of certain Lemnaceae in Michigan. *Pap. Michig. Acad. Sci.* 17, 67-68.
- COLER R.A. und GUNNER H.B., 1969: The rhizosphere of an aquatic plant (*Lemna minor*). *Can. J. Mikrob.* 15, 964-969.
- 1971: The response of a specialized aquatic ecosystem, the duckweed rhizosphere, to selected environmental influences. *Water Res.* 5, 329-333.

- COLMEIRO D.M., 1889: Enumeracion y Revision de las Plantas de la Peninsula Hispano-Lusitana 5, 7-9. Madrid.
- COOK A.R., 1968: Urea as sole source of nitrogen for plant growth. II. Urease and the metabolism of urea in *Spirodela oligorrhiza*. *Planta* 83, 13-19.
- COOKE R.J., GREGO S., OLIVER J. und DAVIES D.D., 1979: The effect of deuterium oxide on protein turnover in *Lemna minor*. *Planta* 146, 229-236.
- ROBERTS K. und DAVIES D.D., 1980: The mechanism of deuterium oxide-induced protein degradation in *Lemna minor*. *Planta* 148, 374-380.
- OLIVER J. und DAVIES D.D., 1979: Stress and protein turnover in *Lemna minor*. *Plant Physiol.* 64, 1109-1113.
- COPE B.T., BOSE S., CRESPI H.L. und KATZ J.J., 1965: Growth of *Lemna* in H_2O-D_2O mixtures: Enhancement by kinetin. *Bot. Gaz.* 126, 214.
- COUTINHO A.X.P., 1939: Flora de Portugal. 2. Aufl. Bertrand Ltd., Lissabon, 134-135.
- COWGILL U.M., 1970: The hydrochemistry of Linsley Pond, North Branford, Connecticut. I. Introduction, field work and chemistry by X-ray emission spectroscopy. *Arch. Hydrobiol.* 68, 1-95.
- CRAKER L.E., 1971: Effects of mineral nutrients on ozone susceptibility of *Lemna minor*. *Can. J. Bot.* 49, 1411-1414.
- 1972: Influence of ozone on RNA and protein content of *Lemna minor* L. *Environ. Pollut.* 3, 319-323.
- CRESPI H.L., STEWART M.L., KLINE J.R. und KATZ J.J., 1972: Discrimination against tritium by fully deuterated algae. *Health Phys.* 23, 111-112.
- CROWDER A.A., BRISTOW J.M., KING M.R. und VANDERKLOET S., 1977a: Distribution, seasonality, and biomass of aquatic macrophytes in Lake Opinicon (Eastern Ontario). *Naturaliste Can.* 104, 441-456.
- 1977b: The aquatic macrophytes of some lakes in Southeastern Ontario. *Naturaliste Can.* 104, 457-464.
- CULLEY D.D. und EPPS A.E., 1973: Use of duckweed for waste treatment and animal feed. *J. Water Pollut. Control Fed.* 45, 337-347.
- GHOLSON J.H., CHISHOLM T.S., STANDIFER L.C. und EPPS E.A., 1978: Water quality renovation of animal waste lagoons utilizing aquatic plants. *U.S. Environm. Prot. Agency*, Ada, Oklahoma. 166 S.
- und MYERS R.W., 1980: Effect of harvest rate on duckweed yield and nutrient extraction in dairy waste lagoon. *Polykopie*. Baton Rouge. 6 S.
- CURTIS H.L., 1971: A study of endogenously produced factors affecting growth and flowering in three species of *Lemna*. *Diss. Ohio State Univ. Diss. Absts. Int. B* 32, 117.
- CZOPEK M., 1959a: Cultivation of Polish Lemnaceae species in laboratory conditions. *Acta Biol. Cracov. Ser. Bot.* 2, 14-22.
- 1959b: Researches on the physiology of formation and germination of turions in *Spirodela polyrrhiza* (L.) Schleiden. *Acta Biol. Cracov.* 2, 75-90.
- 1962: The oligodynamic action of light on the germination of turions of *Spirodela polyrrhiza* (L.) Schleiden. *Acta Soc. Bot. Pol.* 31, 703-722.
- 1963: Studies on the external factors inducing the formation of turions in *Spirodela polyrrhiza* (L.) Schleiden. *Acta Soc. Bot. Pol.* 32, 199-211.
- 1963: (Methods of Lemnaceae culture) *Poln. Wiadomosci Bot.* 7, 153-164.
- 1967: Photosynthesis and respiration of turions and vegetative fronds of *Spirodela polyrrhiza*. *Acta Soc. Bot. Pol.* 36, 87-96.

- CZYGAN F.-C., 1962: Blütenbildung bei *Lemna minor* nach Zusatz von Oestrogenen. Naturwissenschaften 49, 285.
- DALE H.M. und GILLESPIE T., 1976: The influence of floating vascular plants on the diurnal fluctuations of temperature near the water surface in early spring. Hydrobiologia 49, 245-256.
- und MILLER G.E., 1978: Changes in the aquatic macrophyte flora of Whitewater Lake near Sudbury, Ontario, from 1947 to 1977. Can. Field-Nat. 92, 264-270.
- DALGLIESH J.G., 1926a: Observations on the British Lemnaceae. J. Bot. (London) 64, 48-50.
- 1926b: Notes on duckweeds. J. Bot. (London) 64, 272-274.
- DAMANAKIS M.E., 1976: Behaviour of glyphosphate in the soil (adsorption, leaching, degradation). Ann. Inst. Phytopathol. Benaki 11, 153-167.
- DRENNAN D.S.H., FRYER J.D. und HOLLY K., 1970: The adsorption and mobility of paraquat on different soils and soil constituents. Weed Res. 10, 264-277.
- DAS R.R., 1968: Growth and distribution of *Eichhornia crassipes* (Mart.) Solms. and *Spirodela polyrhiza* (L.) Schleid. Ph. D. thesis, Banaras Hindu Univ., Varanasi.
- 1971: Productivity of *Spirodela polyrhiza* (L.) Schleid. Internat. Symp. Trop. Ecology Emphasizing Productivity.
- und GOPAL B., 1969: Vegetative propagation in *Spirodela polyrhiza*. Trop. Ecol. 10, 270-277.
- DATKO A.H., MUDD S.H. und GIOVANELLI J., 1980a: *Lemna paucicostata* Hegelm. 6746. Development of standardized growth conditions suitable for biochemical experimentation. Plant Physiol. 65, 906-912.
- 1980b: *Lemna paucicostata* Hegelm. 6746. Life cycle and characterization of the cowny types in a population. Plant Physiol. 65, 913-923.
- und MC NICOL P.K., 1978: Phytostat for the growth of *Lemna* in semi-continuous culture with low sulfate. Plant Physiol. 62, 622-628.
- 1978a: Sulfur containing compounds in *Lemna perpusilla* 6746 grown at range of sulfate concentrations. Plant Physiol. 62, 629-635.
- DAUBS E.H., 1962: The occurrence of *Spirodela oligorrhiza* in the United States. Rhodora 64, 83-85.
- 1965: A monograph of Lemnaceae. Illinois Biol. Monogr. 34, The Univ. of Illinois Press, Urbana, 118 S.
- DAVIES D.D., 1978: The effect of stress on protein degradation in plants. In: SCHUETTE H.R. und GROSS D. (Ed.), Regul. Dev. Processes Plants, Proc. Conf. 1977, Fischer, Jena, 13-35.
- und HUMPHREY T.J., 1978: Amino acid recycling in relation to protein turnover. Plant Physiol. 61, 54-58.
- DECLAIRE M., DE CAT W. und BASTIN R., 1976: Détection rapide de divers herbicides dans l'eau par la mesure in vivo de l'activité de la nitrate réductase de *Lemna minor* L. Zeitschr. Pflanzenphys. 77, 315-322.
- DEKOCK P.C., CHESHIRE M.V., MUNDIE C.M. und INKSON R.H.E., 1979: The effect of galactose on the growth of *Lemna*. New Phytol. 82, 679-685.
- FLORA G.B. und INNES A.M., 1974: The effect of salicylic acid on the growth of *Lemna gibba*. Ann. Bot. 38, 903-908.
- und INNES A.M., 1970: The effect of amitrole on duckweed. Can. J. Bot. 48, 1285-1288.
- OHTA Y., INKSON R.H.E. und KNIGHT A.H., 1973: The effect of oxalate and ethylenediaminetetraacetic acid on the absorption of calcium into

- Lemna*. Physiol. Plant. 28, 379-382.
- VAUGHAN D. und HULL A., 1978: Effect of abscisic acid and benzyl adenine on the inorganic and organic composition of the duckweed, *Lemna gibba* L. New Phytol. 81, 505-512.
- DELILE A., 1813: Flore d'Egypte. Paris. 75.
- DELPINO F., 1882: Rivista di Botanica dell'anno 1881. Milano. 33 S.
- DEMARTY M., AYADI A., MONNIER A., MORVAN C. und THELLIER M., 1977: Electrochemical properties of isolated cell walls of *Lemna minor* L. Colloq. Int. C.N.R.S. 258, 61-73.
- MORVAN C. und THELLIER M., 1978: Exchange properties of isolated cell walls of *Lemna minor* L. Plant Physiol. 62, 477-481.
- DENTON J.B., 1966: Relationship between the chemical composition of aquatic plants and water quality. M.S. Thesis. Auburn Univ., Auburn. 14 S.
- DEVI S. und MAHESHWARI S.C., 1979: Diurnal fluctuation in the activity of the enzyme nitrate reductase in *Lemna paucicostata*. Physiol. Plant. 45, 467-469.
- DEVIDÉ Z., 1956: A new locality of *Wolffia arrhiza* (L.) Wimm. in Croatia. Acta Bot. Zagreb 14/15, 184-186.
- DEYL M., 1955: The evolution of the plants and the taxonomy of the monocotyledons. Acta Mus. Nat. Pragae 11B(6), 143 S.
- DEYSSON G., 1959: Action de la kinétine et de la thiokinétine sur la croissance de la lentille d'eau (*Lemna minor* L.). C. R. Acad. Sci. 248, 841-843.
- DICHT M., KOPP A., FELLER U. und ERISMANN K.H., 1976: Einfluss von Ammonium und Nitrat auf den Proteingehalt von *Lemna minor* L. unter Photosynthesebedingungen. Biochem. Physiol. Pflanz. 170, 531-534.
- DICKSON H., 1938a: The occurrence of long and short cycles in growth measurements of *Lemna minor*. Ann. Bot. N.S. 2, 97-106.
- 1938b: Sampling as the cause of the apparent growth cycles of *Lemna minor*. Ann. Bot. N.S. 2, 793-806.
- DORE W.G., 1957: *Wolffia* in Canada. Can. Field-Nat. 71, 10-16.
- DOSS R.P., 1974: Factors which influence the flowering of *Lemna perpusilla*, strain 6746. Diss. Univ. Calif., Davis. Diss. Absts. Int. B, 35, 1525.
- 1975: Influence of temperature on the flowering of *Lemna perpusilla* 6746 grown under skeleton photoperiods. Plant Physiol. 55, 108-109.
- 1975a: Influence of timing and number of consecutive inductive photoperiodic cycles on the flowering of *Lemna*. Plant Physiol. 55, 110-111.
- 1975b: Reversal of the effects of a night interruption in *Lemna* by inhibitors of ribonucleic acid synthesis. Plant Physiol. 55, 112-113.
- 1975: Influence of short term inhibitor treatment on the flowering of *Lemna perpusilla* 6746. Plant Physiol. 56, 360-363.
- 1978: Handedness in duckweed: Double flowering fronds produce right- and left-handed lineages. Science 199, 1465-1466.
- DUFF R.B., 1965: The occurrence of apiose in *Lemna* (duckweed) and other angiosperms. Biochem. J. 94, 768-772.
- und KNIGHT A.H., 1963: The occurrence of apiose in *Lemna* (duckweed) and other angiosperms. Biochem. J. 88, 33P-34P.
- DUHOVA E., 1970: (Contribution to the production ecology of duckweeds) tschech. Diplomarbeit Prace Karlovy Univ., Praha.
- DUKE S.H., 1975: Glutamate dehydrogenase: studies of the enzyme in *Pisum* and *Pastinaca* roots, *Lemna* clones and *Glycine* root nodules in relation to distribution, red and far-red illuminations, oscillations in activity,

- urea utilization and carbohydrate metabolism. Ph. D. thesis., 152 S.
Diss. Absts. Int. B, 36, 3196.
- und KOUKKARI W.L., 1977: Glutamate dehydrogenase activity in *Lemna perpusilla* 6746: The effects of sucrose, glucose and fructose in addition to growth media. *Physiol. Plant.* 39, 67-72.
- DUTAILLY G., 1878: Sur la nature réelle de la fronde et du cotylédon des *Lemna*. *Bull. Mens. Soc. Linn. Paris* 19, 147.
- DUVAL Y., THELLIER M., HEURTEAUX C. und WISSOCQ J.C., 1980: Detection of stable isotopes with a (n,α) nuclear reaction: Application to the measurement of unidirectional fluxes of borate in a plant. *J. Radioanal. Chem.* 55, 297-306.
- DYER T.A. und BOWMAN C.M., 1976: A sequence analysis of low-molecular-weight rRNA from chloroplasts of flowering plants. *Genet. Biog. Chloroplasts Mitochondria, Interdiscip. Conf.* 1976, 645-651.
- 1979: Nucleotide sequences of chloroplast 58 ribosomal ribonucleic acid in flowering plants. *Biochem. J.* 183, 595-604.
- VAN DYKE J.M. und SUTTON D.L., 1977: Digestion of duckweed (*Lemna* ssp.) by the grass carp (*Ctenopharyngodon idella*). *J. Fish. Biol.* 11, 273-278.
- DYKYJOVA D., 1979: Selective uptake of mineral ions and their concentration factors in aquatic higher plants. *Folia Geobot. Phytotax.* 14, 267-325.
- EATON R.J., 1937: *Wolffia columbiana* in Concord, Massachusetts. *Rhodora* 41, 42-43.
- 1947: *Lemna minor* as an aggressive weed in the Sudbury River. *Rhodora* 49, 165-171.
- EDELMAN M. und REISFELD A., 1978: Characterization, translation and control of the 32,000 dalton chloroplast membrane protein in *Spirodela*. In: AKOYUNOGLOM G. und ARGYROUDI-AKOYUNOGLOM J.H. (Ed.), Elsevier, Amsterdam, 641-652.
- EDMONDSON Y.H. und THIMANN K.V., 1950: The biogenesis of the anthocyanins. II. Evidence for the mediation of copper in anthocyanin synthesis. *Arch. Biochem.* 25, 79-90.
- EDWARDS J.L., 1932: *Wolffiella floridana* in Northern New Jersey. *Torreya* 32, 100.
- EFRAT Y., PIETERSE A.H. und BOUMAN F., 1977: A comparative study of developing air chambers in flat and gibbous fronds of *Lemna gibba* L. *Acta Bot. Neerl.* 26, 343-347.
- EHMKKE A. und HARTMANN T., 1976: Properties of glutamate dehydrogenase from *Lemna minor*. *Phytochemistry* 15, 1611-1617.
- 1978: Control of glutamate dehydrogenase from *Lemna minor* by divalent metal ions. *Phytochemistry* 17, 637-641.
- EHRHART F., 1779: Wiedergefundene Blüte der dicken Wasserlinse (*Lemna gibba* L.). *Hannoverisch. Magazin* 17, 1057-1068; auch in ERHART F., *Beiträge Naturk.* 1, 43-51 (1787).
- EHRLICH S., 1966: Two experiments in the biological clarification of stabilization-pond effluents. *Hydrobiologia* 27, 70-80.
- EICHHORN M. und AUGSTEN H., 1977: Die Wirkung von Blau- und Rotlicht auf die Aktivität der Glucose-6-phosphat-Dehydrogenase und das Adenylsystem bei *Wolffia arrhiza* unter steady state Bedingungen. *Zeitschr. Pflanzenphys.* 85, 147-152.
- EICHLER A.W., 1875: Blütendiagramme I. Leipzig. 73-80.
- ELLIOT D.C., 1977: Induction by EDTA of anthocyanin synthesis in *Spirodela oligorrhiza*. *Austral. J. Plant Physiol.* 4, 39-49.

- ELZENGA J.T.M., DE LANGE L. und PIETERSE A.H., 1980: Further indications that ethylene is the gibbosity regulator of the *Lemna gibba* / *Lemna minor* complex in natural waters. *Acta Bot. Neerl.* 29, 225-229.
- ENGELMANN G., 1870: *Spirodela*. Bull. Torr. Club 1, 42-43.
- 1871a: Anthers of *Lemna*. Bull. Torr. Club 2, 10-11.
 - 1871b: Note. Bull. Torr. Club 2, 34-35.
 - 1871c: *Spirodela polyrrhiza*. Bull. Torr. Club 2, 46-47.
- ENGLER A., 1877: Vergleichende Untersuchungen über die morphologischen Verhältnisse der Araceae. *Nova Acta K. Leop.-Carol. Dtsch. Akad. Natf.* 39, 135-224.
- 1889: Lemnaceen. Engler-Prantl's Natürliche Pflanzenfamilien II, 3, 154.
 - 1920: Araceae-Pistioideae. In: ENGLER A., Das Pflanzenreich IV, 23 F, 250-262. W. Engelmann, Leipzig.
- ERDTMAN G., 1952: Pollen morphology and plant taxonomy: I. Angiosperms. Almquist und Wiksell. 539 S.
- ERICKSON L.C. und WEDDING R.T., 1956: Effects of ozonated hexene on photosynthesis and respiration of *Lemna minor*. *Am. J. Bot.* 43, 32-36.
- ERISMANN K.H., 1972: Untersuchungen zur Analyse des CO₂-Outburst bei der Photorespiration von *Lemna minor*. *Verh. Schweiz. Naturf. Ges.* 152, 151-153.
- und BRUNOLD C., 1967: Die Probeentnahme in kinetischen Stoffwechseluntersuchungen mit Wasserlinsen *Lemna minor* L. (Lemnaceen). *Experientia* 23, 235.
 - 1973: Die Verwendung einer neuen *Lemna*-Kulturanlage in Wachstums- und Stoffwechseluntersuchungen mit gelösten und gasförmigen Schwefelverbindungen. *Ber. Schweiz. Bot. Ges.* 83, 213-222.
 - und FANKHAUSER M., 1967: Die Veränderung des Stärke-, Protein- und RNS-Gehaltes von *Lemna minor* unter dem Einfluss von Kinetin (6-Furfurylaminopurin). *Experientia* 23, 621-622.
 - und FINGER A., 1968: Lemnaceen in kontinuierlicher Kultur. *Ber. Schweiz. Bot. Ges.* 78, 5-15.
 - und KIRK M.R., 1967: Kinetische Untersuchungen zur Aminosäure- und Proteinsynthese durch *Lemna minor* L. im Licht unter Steady-state-Bedingungen. *Verh. Schweiz. Naturf. Ges.* 147, 141-143.
 - 1969: The influence of nitrogen source on metabolic intermediates in steady-state photosynthesis by *Lemna minor* L. In: METZNER H. (Ed.), *Progress Photosynth. Res.* 3, 1538-1545.
 - STRASSER R. und BRÄNDLE R., 1967: Untersuchungen zur photosyntheseeabhängigen Sulfidoxidation durch Algen und höhere Pflanzen, insbesondere *Lemna minor* L. *Verh. Schweiz. Naturf. Ges.* 147, 139-141.
 - und WEGNER F., 1967: Der Einfluss einer wachstumshemmenden Kinetinkonzentration auf Chlorophyllgehalt, Photosyntheserate und Stärkeproduktion von *Lemna minor* L. *Flora A* 158, 433-442.
- ERNST W.H.O. und MARQUENIE-VAN DER WERFF M., 1978: Aquatic angiosperms as indicators of copper contamination. *Arch. Hydrobiol.* 83, 356-366.
- ESAHY Y. und ODA Y., 1964: Effects of light intensity and sucrose on the flowering of *Lemna perpusilla*. *Plant Cell Physiol.* 5, 513-516.
- 1966: Two light reactions in the photoperiodic control of flowering of *Lemna perpusilla* and *L. gibba*. *Plant Cell Physiol.* 7, 59.
 - SHIBASAKI T. und SAITO K., 1972: Flowering responses of *Lemna perpusilla* and *L. gibba* in relation to nitrate concentration in the culture medium. *Plant Cell Physiol.* 13, 623-631.

- EVANS G.C., 1972: The quantitative analysis of plant growth. Blackwell, Oxford. 186-254.
- EVANS O.D., 1970: Some observations on the Lemnaceae or "Duckweeds" of New South Wales. Contrib. N.S. Wales Nat. Herb. 4, 87-94.
- VAN EYK J., 1963: Investigation on the mode of action of kinetin with *Lemna minor* L. Thesis Univ. Leiden.
- und VELDSTRA H., 1966: A comparative investigation of kinetin (6-furylaminopurine) and some similarly substituted purines and pyrimidines with *Lemna minor* (L.). Phytochem. 5, 457-462.
- EYSTER C., BROWN T.E., TANNER H.A. und HOOD S.L., 1958: Manganese requirement with respect to growth, Hill reaction and photosyntheses. Plant Physiol. 33, 235-241.
- FAGERLIND F. und MASSALSKI A., 1974: The development of cell walls and intercellulares in the root of *Lemna minor* L. Sven. Bot. Tidskr. 68, 64-93.
- FANKHAUSER H., 1975: Untersuchung von Auswirkungen subtoxischer Schwefeldioxid-Konzentrationen auf Wachstum und Stoffproduktion bei *Lemna minor* L. unter Standardbedingungen. Lizentiatsarbeit Bern.
- BRUNOLD C. und ERISMANN K.H., 1974: Der Einfluss von SO₂ im Bereich der Grenzkonzentration auf die Netto-Stoffproduktion bei *Lemna minor* L. Verh. Schweiz. Naturf. Ges. 154, 198-199.
- 1976: The influence of sublethal concentrations of sulfur dioxide on morphology, growth and product field of the duckweed *Lemna minor* L. Oecologia 23, 201-209.
- und ERISMANN K.H., 1967: Durch Kinetin induzierte Veränderungen im Protein- und Nukleinsäurestoffwechsel von *Lemna minor* L. Verh. Schweiz. Naturf. Ges. 147, 141.
- 1969: Ueber den Einfluss des Kinetins (6-Furfuryl-Amino-Purin) auf den Zuckergehalt von *Lemna minor* L. Flora A 160, 342-349.
- FEKETE A., RIEMER D.N. und MOTTO H.L., 1976: A bioassay using common duckweed to evaluate the release of available phosphorus from pond sediments. J. Aquat. Plant 14, 19-25.
- FELDMANN A., 1968: Beiträge zur Strahlenstimulation. I. Versuche zu einer Reproduktion von Stimulationserscheinungen bei *Lemna minor* L. Radiat. Bot. 8, 425-437.
- 1969: Beiträge zur Strahlenstimulation. II. Ueber den Einfluss der Tageslänge auf die strahleninduzierte Wachstumsförderung bei *Lemna minor* L. Radiat. Bot. 9, 459-471.
- 1971: Beiträge zur Strahlenstimulation. III. Einfluss der Temperatur auf die strahleninduzierte Wachstumsförderung bei *Lemna minor* L. Radiat. Bot. 11, 59-65.
- 1975: Beiträge zur Strahlenstimulation. V. Der Einfluss von Licht- und Temperaturänderungen sowie des Bestrahlungszeitpunktes auf die strahleninduzierte Wachstumsförderung bei *Lemna minor* L. Radiat. Bot. 15, 49-58.
- FELLER U., 1975: Untersuchungen zur Ermittlung von Angriffspunkten der Stoffwechselregulation durch Ammonium und Nitrat bei *Lemna minor* L. Diss. Univ. Bern.
- und ERISMANN K.H., 1971: Einfluss der Beleuchtungsstärke auf die Ammonium- und Nitrataufnahme bei *Lemna minor*. Verh. Schweiz. Naturf. Ges. 151, 96-99.
- 1973: Wechselwirkungen zwischen Stickstoffquelle und Ionenhaushalt bei *Lemna minor* L. unter Photosynthesebedingungen. Verh. Schweiz. Naturf.

- Ges. 153, 75-79.
- 1976: Einfluss der Aminosäuren Ornithin, Citrullin und Arginin auf das Wachstum von *Lemna minor* bei gleichzeitigem Angebot von Ammonium oder Nitrat. Ber. Schweiz. Bot. Ges. 86, 129-135.
- FERGUSON A.R., 1966: Responses of *Spirodela oligorrhiza* to changes in its nutrient environment. Diss. Univ. Auckland N.Z.
- 1969: The nitrogen metabolism of *Spirodela oligorrhiza*. II. Control of the enzyme of nitrate assimilation. Planta 88, 353-363.
 - 1970: Nitrogen metabolism of *Spirodela oligorrhiza*. III. Amino acids and the utilization of nitrate. Planta 90, 365-369.
 - und BOLTARD E.G., 1969: Nitrogen metabolism of *Spirodela oligorrhiza*. I. Utilization of ammonium, nitrate and nitrite. Planta 88, 344-352.
- FERNALD M.L., 1941: Another Century of Additions to the Flora of Virginia. Rhodora 43, 547.
- FILBIN G.J. und HOUGH R.A., 1979: The effects of excess copper sulfate on the metabolism of the duckweed *Lemna minor*. Aquat. Bot. 7, 79-86.
- FINTHA I., 1979: Revision of the home distribution of *Wolffia arrhiza* (L.). Tiscia 14, 71-79.
- FISCHER H., 1949: Plasmolyseform und Mineralsalzgehalt in alternden Blättern. II. Untersuchungen an Land- und Schwimmmpflanzen. Planta 37, 244-292.
- FITZGERALD V.W., 1918: The botany of the Kimberleys, North-west Australia. J. Proc. Roy. Soc. West-Australia 3, 102-224.
- FLETCHER N.F., 1965: An experimental study of the venation of *Lemna minor* L. Diss. Abstr. 25 (11), 6178.
- und ARNOTT H.J., 1963: The venation of *Lemna minor* in sterile culture. Am. J. Bot. 50, 621.
 - 1964: Statistical analysis of *Lemna minor* venation. Am. J. Bot. 51, 675.
- FLY C.L., 1935: Organic iron and hydrogen-ion concentration as associated factors affecting the rate of reproduction of *Lemna major*. Oklahoma Acad. Sci. Proc. 15, 77-80.
- FOX R.L. und ALBRECHT W.A., 1958: Calcium-boron interactions - demonstrated by *Lemna minor* on clay suspensions. Univ. Missouri Agr. Expt. Sta. Res. Bull. 663, 15 S.
- FRAHM E.E., 1938: Plant promoting substances on vitamin content and reproduction of *Lemna*. Iowa State Coll. 13, 63-66.
- FRANCHET A., 1864: Note sur le mode de reproduction de la *Bruniera vivipara* (*Lemna arrhiza* L.). Billotia 1, 25-31.
- FRICK H., 1972: Inhibitor-induced bleaching in *Lemna minor*. Univ. Microfilms Int., Ann Arbor, Order No. 72-29,369; 369 S. Diss Abstr. Int. B 33, 4670.
- 1975: Phytochrome control of the lag phase of chlorophyll accumulation in *Lemna minor*. Can. J. Bot. 53, 2405-2410.
 - 1978: Pyrimidine metabolism in *Lemna minor*. I. Functional compartmentation of chloroplast pyrimidine metabolism in a higher plant. Plant Physiol. 61, 989-992.
 - und JONES R.F., 1975: Inhibition of chlorophyll synthesis in *Lemna minor* by nalidixic acid. Can. J. Bot. 53, 2319-2324.
 - 1976: Physiology and plastid fine structure of deetiolating *Lemna minor*. Can. J. Bot. 54, 1819-1826
 - und MOHR H., 1973: Phytochrome-mediated growth responses in green and etiolated *Lemna minor*. Planta 109, 281-292.

- FRÖMMING E., 1952: Ueber das Verhalten unserer Wasserschnecken gegenüber Lemnaceen. Arch. Molluskenkunde 81, 45-48.
- FROMM F., 1949: La acción del ácido furilacrilico sobre *Spirodela polyrrhiza*. Ciencia (Mexico) 9, 40-42.
- 1951: A quantitative evaluation of the *Lemna* test for herbicides. Bot. Gaz. 113, 86-90.
 - 1960: A modification of the *Lemna* test for phytotoxicity. J. Agric. Univ. Puerto Rico 44, 93-102.
 - und O'DONELL M.L., 1951: The action of SO_2NH_2 derivates on duckweed. Proc. Pennsylv. Acad. Sci. 25, 85-88.
 - 1952: The influence of p-aminobenzoic acid on the growth of duckweed (*Lemna minor*). Proc. Pennsylv. Acad. Sci. 26, 50-53.
 - 1953: Acción simultánea del ácido P-aminobenzóico y derivados del grupo SO_2NH_2 sobre lentejas de agua (*Lemna minor*). Acta Cienc. Venezolana 4, 66-67.
 - 1955: The action of tauramide, 2-acetyl amino-1,3,4-thiodiazole-5-sulfonamide, and N-substituted sulfanilamides on duckweed, *Lemna minor*. Proc. Pennsylv. Acad. Sci. 29, 135-140.
 - und PACE A., 1957: The phytotoxicity of 2-amino-1,3,4-thiadiazole-5-sulfonamide. Bol. Col. Quim. Puerto Rico 14 (1).
 - VIDAL I.M. und COLEMAN J., 1949: The action of herbicides on Lemnaceae. Proc. Pennsylv. Acad. Sci. 23, 85-90.
- FRYE J.B. und CULLEY D.D., 1980: A feasibility study of the conversion of animal feedlot wastes to useful energy in Louisiana. Final Report 1978-1980. Baton Rouge. 11 S.
- GABRYS-MIZERA H., 1976: Refractive index determination of the cell wall and cytoplasm by interference microscopy. Bull. Acad. Pol. Sci. Biol. 24, 181-184.
- 1976: Model considerations of the light conditions in non-cylindrical plant cells. Photochem. Photobiol. 24, 453-461.
- GANNING B. und WULFF F., 1970: Measurements of community metabolism in some Baltish brackish water rockpools by means of dial oxygen curves. Oikos 21, 292-298.
- GASPARRINI G., 1856: Osservazioni morfologiche sopra taluni organi della *Lemna minor*. Napoli.
- GAUSMAN H.W., 1977: Reflectance of leaf components. Remote Sens Environ. 6, 1-9.
- GEISSMAN T.A. und JURD L., 1955: The anthocyanin of *Spirodela oligorrhiza*. Arch. Biochem. Biophys. 56, 259-263.
- GESSNER F., 1955: Hydrobotanik. I. Energiehaushalt. Dtsch. Verl. d. Wiss., Berlin. 517 S.
- GIARDELLI M.L., 1935: Las flores de *Wolffiella oblonga*. Revista Argentina de Agronomía 2, 17-20.
- 1937: Una nueva especie de Lemnacea de la Flora Argentina. Notas del Museo de la Plata 2, Botanica 12, 97-100.
 - 1939a: El Florecimiento de *Spirodela intermedia* W. Koch. Notas del Museo de la Plata 4, Botanica 26, 317-322.
 - 1939b: Nuevas especies de Lemnaceas para la Flora Argentina. Physis 15, 323-329.
 - 1941: *Lemna disperma*, especie nueva para la Flora Argentina. Darwiniana 5, 190-193.

- 1947: Nota sobre una Lemnacea tropical poco conocida *Wolffia Welwitschii* Hegelm. *Darwiniana* 7, 552-556.
- 1959: "Lemna aequinoctialis Welwitsch" nueva para la flora de America y de las islas Filipinas. *Darwiniana* 11, 584-590.
- 1970: *Lemnaceae*. "Flora Patagonica" INTA - Coleccion Cientifica 8/2, 93-101.
- 1972: *Wolffia brasiliensis*, especie de Lemnaceas nueva para la flora argentina. *Darwiniana* 17, 596-597.
- GICKLHORN J., 1958: Wasserlinsen. Universum, Natur und Technik 13, 24-27.
- GILBERT H.C., 1937: Lemnaceae in flower. *Science* 86, 308.
- GILLIE C.C., 1962: Operation and performance of sewage maturation ponds at Paarl, South Africa. *Inst. Sewage Purif. J. Proc.* 3, 230-240.
- GILLMAN H., 1871a: *L. trisulca* in flower. *Am. Naturalist* 5, 651-652.
- 1871b: *L. polyrrhiza* in flower. *Am. Naturalist* 5, 652-653.
- 1881: *L. polyrrhiza* again discovered in flower on Detroit River. *Am. Natur.* 15, 896-897.
- GIUGA G., 1973: Vita segreta di Lemnacee. *Lemna symmeter* G. Giuga - species nova. Blario, Napoli. 19 S.
- GLANDON R.P. und McNABB C.D., 1978: The uptake of boron by *Lemna minor*. *Aquat. Bot.* 4, 53-64.
- GLICKMANN L.T., 1966: Some factors affecting the dark processes in the germination of seeds of *Lemna perpusilla* 6746. M.A. thesis, State Univ. of New York at Binghampton, N.Y.
- GODEANU S., GODEANU M., DIACONU M.O.I. und GITYA V., 1978: Biocenosis installation in the pools of biological epuration naturally inseminated or planted with aquatic macrophytes. *Trav. Mus. Hist. Nat. "Grigore Antipa"* 19, 125-130.
- GODZIEMBA-CZYZ J., 1969: Characteristic of vegetative and resting forms of *Wolffia arrhiza* (L.) Wimm. I. Growth and dynamics of their mutual transformation. *Acta Soc. Bot. Pol.* 38, 437-452.
- 1970: Vegetative and resting forms of *Wolffia arrhiza*. II. Anatomy, physical and physiological properties. *Acta Soc. Bot. Pol.* 39, 421-444.
- GOEBEL K., 1921: Zur Organographie der Lemnaceen. *Flora* 114, 278-305.
- GORDON W.R., 1977: An investigation of phenylalanine ammonia-lyase during growth and development in members of the Lemnaceae under varying conditions of axenic culture. *Univ. Microfilms Int.*, Ann Arbor, Order No. 77-18,991; 174 S. Diss. Abstr. Int. B, 38, 989.
- SCHWEMMER S.S. und HILLMANN W.S., 1978: Nickel and the metabolism of urea by *Lemna paucicostata* Hegelm. 6746. *Planta* 140, 265-268.
- und KOUKKARI W.L., 1978: Circadian rhythmicity in the activities of phenylalanine ammonia lyase from *Lemna perpusilla* and *Spirodela polyrhiza*. *Plant Physiol.* 62, 612-615.
- GORHAM P.R., 1941: Measurements of the response of *Lemna* to growth promoting substances. *Am. J. Bot.* 28, 98-101.
- 1945: Growth factor studies with *Sp. polyrrhiza* (L.) Schleid. *Am. J. Bot.* 32, 496-505.
- 1950: Heterotrophic nutrition of seed plants with particular reference to *Lemna minor* L. *Can. J. Research C* 28, 356-381.
- GOTO K., 1978: Mutually inverse rhythmic and sigmoidal changes in activity of cytoplasmic and chloroplast glyceraldehyde 3-phosphate dehydrogenase in *Lemna gibba* G₃. *Plant Cell Physiol.* 19, 749-758.

- 1979a: Modes of control by the circadian oscillator and the hourglass mechanism of the activities of cytoplasmic and chloroplast glyceraldehyde 3-phosphate dehydrogenase in *Lemna gibba* G₃. *Plant Cell Physiol.* 20, 513-522.
- 1979b: Mechanism of control by a circadian oscillation of chloroplast NADP-linked glyceraldehyde 3-phosphate dehydrogenase in *Lemna gibba* G₃. *Plant Cell Physiol.* 20, 523-532.
- GOWER R.A. und POSNER H.B., 1979: Effects of light and 3-(3,4-dichlorophenyl)-1,1-dimethylurea on levels of ATP in *Lemna paucicostata* 6746 and a photosynthetic mutant with abnormal flowering responses. *Plant Physiol.* 63, 548-551.
- GRAVIS A., 1935: Observations anatomiques et éthologiques sur les Cactacées et les Lemnacées. *Acad. R. Belg. Cl. Sci., Mém. 8/14*, fasc. 6.
- GRAY A., 1867: Manual of the Botany of the Northern United States. 5. Aufl. *Lemnaceae*, 478-480. Ivison, Phinney, Blakeman Co., New York.
- GRENIER G., MARIER J.P. und BEAUMONT G., 1979: Effets physiologiques de l'atra-zine à doses sublétale sur *Lemna minor* L. IV. Influence sur la composition lipidique.
- GRESSEL J., 1978: Light requirements of the 0,5x10⁶ MW plastid mRNA during *Spirodesla* greening. *Photochem. Photobiol.* 27, 167-169.
- GRIFFITH W., 1851: Notulae ad plantas asiaticas 3, 216, 220, 221, 229. *Icones plantarum asiaticarum* 3, Tafel 264, Abb. 13, 16. Bishop College Press, Calcutta.
- GRISEBACH A.H.R., 1864: Flora of the British West Indian Islands. London. 512.
- GUERN J., 1960: Mise en évidence de phénomènes de corrélation au cours de la croissance des frondes de *Lemna trisulca* L. *C. R. Acad. Sci. 251*, 894-896.
- 1962: Observations sur la production de frondes axillaires par les frondes de *Lemna trisulca* L. *C. R. Acad. Sci. 254*, 343-345.
- 1963a: Caractéristiques de la croissance des frondes de *Lemna trisulca* L. *C. R. Acad. Sci. 256*, 2220-2222.
- 1963b: Modifications expérimentales de l'intensité de la dominance entre frondes de *Lemna trisulca*. *C. R. Acad. Sci. 256*, 2686-2688.
- 1963c: Remarques à propos de l'action de la kinétine sur le mode de germination des turions de *Spirodesla polyrrhiza* Schleid. *C. R. Acad. Sci. 257*, 3464-3467.
- 1965: Corrélations de croissance entre frondes chez Lemnacées. *Ann. Sc. Nat. Bot.*, Paris, 12, 1-156.
- GUERN N., und TRAPY F., 1964: Action de quelques purines substituées sur la levée de dominance entre frondes filles formées au cours de la germination des turions de *Spirodesla polyrrhiza* Schleid. *C. R. Acad. Sci. 258*, 4329-4332.
- GUMIŃSKI S., MIAZGA T., und NOWAK J., 1978: The effects of sodium humate and detergent DBSS and their joint effect on cultures of *Spirodesla polyrrhiza* (L.) Schleiden. *Ekol. Pol.* 26, 231-240.
- GUPPY H.B., 1894: On the habits of *Lemna minor*, *L. gibba* and *L. polyrrhiza*. *J. Linn. Soc. (London)* 30, 323-330.
- GUPTA B.L., 1935: Studies on the development of the pollen grain and embryo sac on *Wolffia arrhiza*. *Curr. Sci.* 4, 104-105.
- und MAHESHWARI S.C., 1969: Induction of flowering by cytokinins in a short-day plant, *Lemna paucicostata*. *Plant Cell Physiol.* 10, 231-233.

- 1970: Growth and flowering of *Lemna paucicostata*. I. General aspects and role of chelating agents in flowering. II. Role of growth regulators. *Plant Cell Physiol.* 11, 83-95, 97-106.
- GUSTINE D.L., YUAN D.H.F. und KINDEL P.K., 1975: Uridine diphosphate d-glucuronic acid cyclase and uridine diphosphate d-glucuronic acid carboxylyase I from *Lemna minor*; purification, characterization, and separation from uridine diphosphate D-glucuronic acid carboxy-lyase II. *Arch. Biochem. Biophys.* 170, 82-91.
- GUTHRIE R.K. und CHERRY D.S., 1979: The uptake of chemical elements from coal ash and settling basin effluent by primary producers. 1. Relative concentrations in predominant plants. *Sci. Total Environm.* 12, 217-222.
- HAKONSON T.E. und WHICKER F.W., 1975: Cesium kinetics in a montane lake ecosystem. *Health Phys.* 28, 699-706.
- HALABAN R., 1972: Mitotic index and cell cycle of *Lemna perpusilla* under different photoperiods. *Plant Physiol.* 50, 308-310.
- und HILLMANN W.S., 1970: Response of *Lemna perpusilla* to periodic transfer to distilled water. *Plant Physiol.* 46, 641-644.
- 1971: Factors affecting the water-sensitive phase of flowering in the short-day plant *Lemna perpusilla*. *Plant Physiol.* 48, 760-764.
- DE HALACSY E., 1904: *Conspectus Florae Graecae III*. Engelmann, Leipzig, 295 S.
- 1908: *Conspectus Florae Graecae Supplementum*. Engelmann, Leipzig, 107 S.
- HALLER W.T., SUTTON D.L. und BARLOWE W.C., 1974: Effects of salinity on growth of several aquatic macrophytes. *Ecology* 55, 891-894.
- HAMASHIMA S., 1974: A new naturalized duckweed, *Lemna gibba* L. *J. Jap. Bot.* 49, 359.
- 1978a: (Seed germination of three *Lemna* species) *jap. J. Jap. Bot.* 53, 28-31.
- 1978b: (On the flower of *Wolffia arrhiza*) *jap. J. Jap. Bot.* 53, 62.
- D'HARLINGUE A., 1976: Stérols, acides gras, lipochromes et nucléotides pyridiniques et adényliques de frondes de *Spirodela* cultivées en présence d'acide gibberellique. *Physiol. Vég.* 14, 713-723.
- LECHEVALLIER D. und MOREGER R., 1976: Nucléotides pyrinidiques, chlorophylles et stérols des frondes de *Spirodela* cultivées en présence de saccharose. *Physiol. Vég.* 14, 367-376.
- HARRIS S.K. und BEAN R.C., 1951: *Wolffia columbiana* in Methuen Massachusetts. *Rhodora* 53, 272.
- HARRISON D.E., 1964: The taxonomic significance of the effect of nutrient media, photoperiod, and light intensity on the morphological features of the genus *Spirodela* Schleid. Master's thesis, North Carolina State University, Raleigh.
- und BEAL E.O., 1964: The Lemnaceae (duckweeds) of North Carolina. *J. Elisha Mitchell Sci. Soc.* 80, 12-18.
- HART D.A., 1970: Apiogalacturonans from the cell wall of *Lemna minor*. Univ. Microfilms Int., Ann Arbor, Order No. 70-15,048; 136 S. Diss. Abstr. Int. B, 31, 507.
- und KINDEL P.K., 1970a: A novel reaction involved in the degradation of apiogalacturonans from *Lemna minor* and the isolation of apibiose as a product. *Biochemistry* 9, 2190-2196.
- 1970b: Isolation and partial characterization of apiogalacturonans from the cell wall of *Lemna minor*. *Biochem. J.* 116, 569-579.

- DEN HARTOG C., 1968: De platte vorm van *Lemna gibba*, nog steeds een problem. *Gorteria* 4, 90-92.
- 1975: Thoughts about the taxonomical relationships within the *Lemnaceae*. *Aquat. Bot.* 1, 407-416.
 - 1978: Subjective phytosociology of aquatic plants. *Aquat. Bot.* 4, 96-98.
 - und VAN DER PLAS F., 1970: A synopsis of the *Lemnaceae*. *Blumea* 18, 355-368.
 - 1972: The Australian species of *Wolffia* (*Lemnaceae*). *Blumea* 20, 151-153.
 - und SEGAL S., 1964: A new classification of the water-plant communities. *Acta Bot. Neerl.* 13, 367-393.
- HARTUNG W. und KANDELER R., 1976: Die Wirkung abendlicher Dunkelrotbestrahlung auf die Aufnahme und Verteilung markierter Phytohormone in kurztagkultivierten *Lemna gibba* G1-Pflanzen. *Zeitschr. Pflanzenphys.* 79, 360-367.
- HARVEY R.M. und FOX J.L., 1973: Nutrient removal using *Lemna minor*. *J. Water Poll. Control Fed.* 45, 1928-1938.
- HAUPT W. und WEISENSEEL M., 1967: Chloroplastenbewegung bei *Lemna trisulca* in polarisiertem Licht. *Naturwiss.* 54, 48-49.
- HAUSER L.A., 1977: The *Lemnaceae* collection of C.H. Thompson in the University of Kansas Herbarium. *Rep. State Biol. Surv. Kansas* 10, 12 S.
- HAYEK A., 1933: Prodr. Fl. Pen. Balc. 3, *Lemnaceae*. *Rep. Spec. Nov. Regn. Veg. Büh.* 30, 3, 424-425.
- HEALY W.B. und MC COLL R.H.S., 1974: (Clay particles as sources of phosphorus for *Lemna* and their role in eutrophication) ung. *Agrokem. Talajtan* 23, 407-417.
- 1974: Clay particles as sources of phosphorus for *Lemna* and their role in eutrophication. *N.Z. J. Sci.* 17, 409-420.
- HEGELMAIER F., 1865: *Lemnacearum* a. cl. Fr. Welwitsch in Africae aequinoctialis territorio angolensi collectarum descriptio. *J. Bot.* 3, 110-115.
- 1868: Die Lemnaceen. Eine monographische Untersuchung. Engelmann, Leipzig. 169 S.
 - 1871: Ueber die Fruktifikationstheile von *Spirodelta*. *Bot. Z.* 29, 645-666.
 - 1878: *Lemnaceae*. In: Martius Flora Brasiliensis III/2, 1-23.
 - 1885: *Wolffia microscopia*. *Bot. Z.* 43, 241-249.
 - 1895: Systematische Uebersicht der Lemnaceen. *Bot. Jahrb.* 21, 268-305.
- HEGNAUER R., 1963: Chemotaxonomie der Pflanzen. Bd. 2, *Monocotyledonae*. Birkhäuser, Basel und Stuttgart. 73-79, 267-269, 483.
- HEJNY S., 1960: Oekologische Charakteristik der Wasser- und Sumpfpflanzen in den slowakischen Tiefebenen (Donau- und Theissgebiet). Bratislava. 487 S.
- 1968: Bemerkungen zur Klassifikation einiger Makrophytengesellschaften der stehenden Gewässer. In: TÜXEN R. (Ed.), *Pflanzensoziologische Systematik*. The Hague. 230-238.
 - und HUSAK S., 1978: Higher plant communities. In: DYKYJOVÁ D. und KVET J. (Ed.), *Pond littoral ecosystems*. Berlin. 23-64.
- HENNINGS P., 1891: *Lemna trisulca* var. *pygmaea*. *Verh. Bot. Ver. Prov. Brandenburg* 33, 8-9.
- HENSSEN A., 1954: Die Dauerorgane von *Spirodelta polyrrhiza* (L.) Schleid. in physiologischer Betrachtung. *Flora* 141, 523-566.

- HEPPER F.N., 1968: *Lemnaceae*. In: HUTCHINSON J., DALZIEL J.M., Flora of West Tropical Africa, 2. Aufl. Crown Agents, London. 127-129.
- 1973: *Lemnaceae*. In: POLLHILL R.M., Flora of tropical East Africa. East African Community, Arusa, Tanzania. 9 S.
- HERTER W.G., 1954: Flora del Uruguay I, *Lemnaceae*. Rev. Sudam. Bot. 9, 184-186.
- HESSENLAND M. und FROMM F., 1932: Die Wirkung von Natriumchlorat auf Wasserpflanzen. Chem. Z. 56, 326.
- HICKS L.E., 1930: Physiological experiments with the *Lemnaceae*. Proc. Ohio Acad. Sci. 8, 393-394.
- 1932a: Flower Production in *Lemnaceae*. Ohio J. Sci. 32, 115-132.
 - 1932b: Ranges of pH tolerance of the *Lemnaceae*. Ohio J. Sci. 32, 237-244.
 - 1934: Interaction of factors in the growth of *Lemna*. V. Some preliminary observations upon the interaction of temperature and light on the growth of *Lemna*. Ann. Bot. 48, 515-523.
 - 1937: The *Lemnaceae* of Indiana. Am. Midl. Nat. 18, 774-789.
- HILBIG W., 1971: Uebersicht über die Pflanzengesellschaften des südlichen Teiles der DDR. I. Die Wasserpflanzengesellschaften. Hercynia N.F. 8, 4-33.
- HILD J. und REHNELT K., 1965: Oeko-soziologische Untersuchungen an einigen niederrheinischen Kalken. Ber. Deutsch. Bot. Ges. 78, 289-304.
- HILLMAN W.S., 1954: On the mechanism of action of benzimidazole on *Lemna minor*. Ph. D. Diss. Yale Univ.
- 1955: The action of benzimidazole on *Lemna minor*. Plant Physiol. 30, 535-542.
 - 1957: Non-photosynthetic light requirement in *Lemna minor* and its partial satisfaction by kinetin. Science 126, 165-166.
 - 1958: Photoperiodic control of flowering in *Lemna perpusilla*. Nature 181, 1275.
 - 1959a: Experimental control of flowering in *Lemna*. I. General methods. Photoperiodism in *L. perpusilla* 6746. Am. J. Bot. 46, 466-473.
 - 1959b: Experimental control of flowering in *Lemna*. II. Some effects of medium composition, chelating agents and high temperatures on flowering in *L. perpusilla* 6746. Am. J. Bot. 46, 489-495.
 - 1960a: Growth promotion by kinetin of *Wolffia columbiana* grown in excessively concentrated medium. φyton 14, 43-46.
 - 1960b: Effects of gibberellic acid on flowering, frond size and multiplication rate of *Lemna perpusilla*. φyton 14, 49-54.
 - 1961: The *Lemnaceae*, or duckweeds. A review of the descriptive and experimental literature. Bot. Rev. 27, 221-287.
 - 1961a: Photoperiodism, chelating agents, and flowering of *Lemna perpusilla* and *L. gibba* in aseptic culture. In: MC ELROY W.D. und GLASS B. (Eds.), A symposium on light and life. John Hopkin's Press, Baltimore. 673-683.
 - 1961b: Experimental control of flowering in *Lemna*. III. A relationship between medium composition and the opposite photoperiodic responses of *L. perpusilla* 6746 and *L. gibba* G₃. Am. J. Bot. 48, 413-419.
 - 1961c: Test-tube studies on flowering: experiments with the *Lemnaceae*, or duckweeds. Bull. Torr. Bot. Club 88, 327-336.
 - 1962: Experimental control of flowering in *Lemna*. IV. Inhibition of photoperiodic sensitivity by copper. Am. J. Bot. 49, 892-897.

- 1963: Photoperiodism: an effect of darkness during the light period of critical night length. *Science* 140, 1397-1398.
 - 1964: Endogenous circadian rhythms and the response of *Lemna perpusilla* to skeleton photoperiods. *Am. Natur.* 98, 323-328.
 - 1965: Red light, blue light, and copper ion in the photoperiodic control of flowering in *Lemna perpusilla* 6746. *Plant Cell Physiol.* 6, 499-506.
 - 1966: Photoperiodism in *Lemna*: reversal of night-interruption depends on color of the main photoperiod. *Science* 154, 1360.
 - 1969: *Lemna perpusilla* Torr., strain 6746. In: EVANS L.T., *The induction of flowering*. Mac Millan of Australia. 186-204.
 - 1970: Carbon dioxide output as an index of circadian timing in *Lemna* photoperiodism. *Plant Physiol.* 45, 273-279.
 - 1971a: Nitrate and the course of *Lemna perpusilla* carbon dioxide output under daily photoperiodic cycles. *Plant Physiol.* 47, 431-434.
 - 1971b: Entrainment of *Lemna* carbon dioxide output through phytochrome. *Plant Physiol.* 48, 770-774.
 - 1972: Photoperiodic entrainment patterns in the carbon dioxide output of *Lemna perpusilla* 6746 and of several other Lemnaceae. *Plant Physiol.* 49, 907-911.
 - 1975a: Photoperiodism in seedling strains of *Lemna perpusilla*: juvenility without obvious morphological correlations? *Am. J. Bot.* 62, 537-540.
 - 1975b: Effects of inorganic nitrogen on the response of *Lemna* carbon dioxide output to light quality and timing. *Photochem. Photobiol.* 21, 39-47.
 - 1976a: Calibrating duckweeds: light, clocks, metabolism, flowering. Special characteristics of Lemnaceae may offer unique insights into plant development. *Science* 193, 453-458.
 - 1976b: A metabolic indicator of photoperiodic timing. (CO_2 output/*Lemna*/nitrogen metabolism/circadian rhythm/flowering). *Proc. Nat. Acad. Sci. USA* 73, 501-504.
 - 1976c: Light/timer interactions in photoperiodism and carbon dioxide output patterns: Towards a real-time analysis of photoperiodism. *Proc. Easter Sch. Agric. Sci., Univ. Nottingham* 22, 399-417.
 - 1977: Control of plant respiration through non-photosynthetic light action. *Nature* 266, 833-835.
 - 1979a: Temporal compartmentation in *Lemna paucicostata*: Photoperiodism, respiration, nitrogen nutrition and heterotrophic growth of different strains. *Am. J. Bot.* 66, 1021-1028.
 - 1979b: Temperature sensitivity of daily respiratory patterns entrained through phytochrome action in *Lemna paucicostata* Hegelm. 6746. *Phys. Plant.* 47, 56-60.
 - und CULLEY D.D., 1978a: The uses of duckweed. *Am. Scient.* 66, 442-451.
 - 1978b: Cultivating duckweeds. *Polykop. Mskr.*, 32 S.
 - und LAMM S.S., 1979: Occurrence in *Lemna paucicostata* 6612 of a physiological state unable to utilize nitrate. *Polykop. Mskr.* 14 S.
 - und POSNER H.B., 1971: Ammonium ion and the flowering of *Lemna perpusilla*. *Plant Physiol.* 47, 586-587.
- HODGSON G.L., 1970: Effects of temperature on the growth and development of *Lemna minor* under conditions of natural daylight. *Ann. Bot.*, Ser. N., 34, 365-381.

- HODSON H.K. und HAMNER K.C., 1971: A comparison of the effects of autoclaved and non-autoclaved gibberellic acid on *Lemna perpusilla* 6746. *Plant Physiol.* 47, 726-728.
- HOFFMANN J.F., 1840a: Beiträge zur näheren Kenntnis von *Lemna arrhiza* nebst einigen Bemerkungen über *L. polyrrhiza*, *L. gibba*, *L. minor* und *L. trisulca*. *Wiegmanns Arch. Naturgeschichte (Berlin)* 6, 138-163.
- 1840b: Matériaux pour servir à la connaissance du *Lemna arrhiza*, avec quelques observations sur les autres espèces de ce genre. *Ann. Sci. Nat.*, 2^e sér., 14, 223-242.
- HOFMEISTER W., 1861: Neue Beiträge zur Kenntnis der Embryobildung der Phanerogamen. II. Monokotyledonen. *Abh. Math.-Phys. Cl. K. Sächs. Ges. Wiss.* 5, 716 ff.
- HOGEWEG P. und BRENKERT A.L., 1969: Structure of aquatic vegetation: A comparison of aquatic vegetation in India, the Netherlands and Czechoslovakia. *Trop. Ecol.* 10, 139-162.
- HOLMQVIST C., 1971: Northerly localities for three aquatic plants, *Lemna trisulca* L., *Ceratophyllum demersum* L., and *Myriophyllum spicatum* L. *Bot. Notiser* 124, 335-342.
- HOLST R.W. und YOPP J.H., 1979: Comparative utilization of inorganic and organic compounds as sole nitrogen sources by the submergent duckweed, *Lemna trisulca*. *Biol. Plant.* 21, 245-252.
- HOOGERS B.J. und VAN DER WEIJ H.G., 1971: Tijdtabellen als methode voor dat vaststellen van de dynamiek van sloot-vegetaties. Wageningen. Polykopie, 12 S.
- HOPKINS E.F., 1931: Manganese and the growth of *Lemna minor*. *Science* 74, 551-552.
- 1934: Manganese an essential element for green plants. *Cornell Univ. Agr. Exp. Stat. Mem.* 151, 3-40.
- VAN HOREN F., 1869: Observations sur la physiologie des Lemnacées. *Bull. Soc. Roy. Bot. Belg.* 8, 15-88.
- 1870: On the hibernation of Lemnaceae. *J. Bot.* 8, 36-40.
- HOSHINO T. 1979: Simulation of acetylcholine action by β -indole acetic acid in inducing diurnal change of floral response to chilling under continuous light in *Lemna gibba* G3. *Plant Cell Physiol.* 20, 43-50.
- und OOTA Y., 1978: The occurrence of acetylcholine in *Lemna gibba* G3. *Plant Cell Physiol.* 19, 769-776.
- HOSSELL J.C. und BAKER J.H., 1979: Estimation of the growth of epiphytic bacteria and *Lemna minor* in a river. *Freshw. Biol.* 9, 319-328.
- HOWARD R.A., 1979: Nomenclatural notes on some lesser Antillean monocotyledones. *J. Arnold Arbor. Harv. Univ.* 60, 290-301.
- HOWARD-WILLIAMS C., 1977: A check-list of the vascular plants of Lake Chilwa, Malawi, with special reference to the influence of environmental factors in the distribution of taxa. *Kirkia* 10, 563-580.
- HUBALD M., 1975: Das Wachstum und die Entwicklung der Wasserlinse (*Lemna gibba* L., G1) unter besonderer Berücksichtigung des Einflusses verschiedener Zucker und Stickstoffverbindungen. *Diss. Jena*.
- und AUGSTEN H., 1977a: Einfluss verschiedener Zucker und Stickstoffverbindungen auf Wachstum und Entwicklung von *Lemna gibba* L. *Beitr. Biol. Pflanz.* 53, 91-102.
- 1977b: The ultrastructure of duckweed chloroplasts (*Lemna gibba* L. G1) influenced by glycine and deficiency conditions. *Acta Biol. Med. Exp.* 2, 61-64.

- und FEIST H., 1979: Einfluss von Aminosäuren auf den Aminosäuren- und Proteingehalt von *Lemna gibba*. Biol. Rundschau 17, 196-199.
- HUBER W. und SANKHLA N., 1979: Effect of sodium chloride on photosynthesis of *Lemna minor* L. Zeitschr. Pflanzenphysiol. 91, 147-156.
- HUFFMAN D.C., 1980: Economic feasibility of methane generation and production of duckweed for feed on dairy farms in Southeast United States. Polykopie, Baton Rouge. 37 S.
- HÜGEL B., 1974: In vitro-Kultur der Blütenstandsanlagen von *Lemna gibba* und *Lemna paucicostata*. Vergleichende Untersuchungen des Hormonbedarfs für Entwicklung und Geschlechtsausprägung beider Arten. Diss. Würzburg.
- 1976: Gegensätzliche Geschlechtsausprägung von Blütenstandsanalysen der Langtagspflanze *Lemna gibba* und der Kurztagspflanze *Lemna paucicostata* in vitro. Zeitschr. Pflanzenphysiol. 77, 395-405.
 - 1976a: Wirkung von Gibberellin-A₃, CCC, Ethrel und Indolessigsäure auf die Geschlechtsausprägung isolierter Blütenstandsanlagen von Lemnaceen. Zeitschr. Pflanzenphysiol. 80, 283-297.
 - 1976b: Wirkung von Kinetin und Abscisinsäure auf die Entwicklung von Lemnaceen-Blütenstandsanlagen in vitro. Zeitschr. Pflanzenphysiol. 80, 298-305
 - und KANDELER R., 1974: Hormonbedarf in vitro bei Blütenanlagen einer Kurztagpflanze (*Lemna paucicostata* 6746) und einer Langtagpflanze (*Lemna gibba* G₁). Zusammenfass. eines Vortrages, Deutsch. Bot. Ges. u. Verein f. Angew. Bot., Tagung Würzburg 1974, 17-18.
 - ROTTENBURG T. und KANDELER R., 1979: Phytochromsteuerung der Turionenbildung und anderer Entwicklungsprozesse bei *Lemna perpusilla* P 146. Biochem. Physiol. Pflanz. 174, 761-771.
- HULTEN E., 1927: Flora of Kamtchatka and the adjacent islands 1, 331.
- 1968: Flora of Alaska and neighboring Territories. Stanford Univ. Press, Stanford, 282 S.
 - 1971: (Atlas of the distribution of vascular plants in Northwestern Europe) schwed. Ed. 2, Stockholm. 531 S.
- HUMPHREY T.J. und DAVIES D.D., 1974: A new method for the measurement of protein turnover. Biochem. J. 148, 119-128.
- SARAEK S. und DAVIES D.D., 1977: The effect of nitrogen deficiency on the growth and metabolism of *Lemna minor* L. Planta 137, 259-264.
- HUNTER R.D., 1976: Changes in carbon and nitrogen content during decomposition of three macrophytes in freshwater and marine environments. Hydrobiologia 51, 119-128.
- HUTCHINSON T.C. und CZYRSKA H., 1975: Heavy metal toxicity and synergism to floating aquatic weeds. Verh. Int. Ver. Theor. Angew. Limnol. 19, 2102-2111.
- HUTNER S.H., 1953: Comparative physiology of heterotrophic growth. In: LOOMIS W.E., Growth and differentiation in plants. Iowa State Coll. Press, 417-446.
- PROVASOLI L., SCHATZ A. und HASKINS C.P., 1950: Some approaches to the study of the role of metals in the metabolism of microorganisms. Proc. Am. Phil. Soc. 94, 150-170.
- IKUSIMA I., 1955: Growth of duckweed populations as related to frond density. Physiol. Ecol. 6, 69-81.
- 1963: (Biology of duckweeds with special reference to their growth. III.) jap. Physiol. Ecol. 11, 120-138.

- und KIRA T., 1958: Effect of light intensity and concentration of culture solution on the frond multiplication of *Lemna minor* L. *Physiol. Ecol.* 8, 50-60.
- SHINOZAKI K. und KIRA T., 1955: Intraspecific competition among higher plants. III. Growth of duckweed, with a theoretical consideration on the C-D effect. *Jour. Inst. Polytech. Osaka City Univ. D*, 6, 107-119.
- INHUELSEN D. und NIEMEYER R., 1975: Kondensierte Phosphate in *Lemna minor* L. und ihre Beziehungen zu den Nucleinsäuren. *Planta* 124, 159-168.
- 1978: Inositol phosphates from *Lemna minor* L. *Zeitschr. Pflanzenphys.* 88, 103-116.
- ISHIGURI Y. und ODA Y., 1972: The relationship between red and far-red light on flowering of the long-day plant, *Lemna gibba*. *Plant Cell Physiol.* 13, 131-138.
- 1974: Flowering of the long-day plant, *Lemna gibba*, under short-day schedules composed of red and far-red light. *Plant Cell Physiol.* 15, 287-293.
- und TANADA K., 1975: Spectral dependences of flowering in *Lemna perpusilla* and *L. gibba*. *Plant Cell Physiol.* 16, 521-524.
- IVANOVA I.E., 1970: (Certain characteristic features of flowering and pollination in duckweeds (*Lemnaceae* S. Gray)) *russ. Bot. Journ. (USSR)* 55, 649-659.
- 1973: (On the taxonomy of *Lemnaceae* S. Gray.) *russ. Bot. Journ. (USSR)* 58, 1413-1423.
- IVERSEN J., 1929: Studien über die pH-Verhältnisse dänischer Gewässer und ihren Einfluss auf die Hydrophytenvegetation. *Bot. Tidskr.* 40, 277-333.
- und OLSON S., 1946: Die Verbreitung der Wasserpflanzen in Relation zur Chemie des Wassers. *Bot. Tidskr.* 46, 136-145.
- JACOBS D.L., 1947: An ecological life history of *Spirodela polyrrhiza* (greater duckweed) with emphasis on the turion phase. *Ecol. Monogr.* 17, 437-469.
- *Wolffia papulifera* in Florida. *Am. Midl. Nat.* 42, 110-111.
- JÄGER E., 1964: Zur Deutung des Arealbildes von *Wolffia arrhiza* (L.) Wimm. und einiger anderer ornithochorner Wasserpflanzen. *Ber. Deutsch. Bot. Ges.* 77, 101-111.
- JENTSCH H., 1979: Vorkommen und Vergesellschaftung von *Wolffia arrhiza* (L.) Horkel ex Wimmer im Spreewald. *Gleditschia* 7, 251-254.
- JÖNSSON B., 1880: Om embryosäckens utveckling hos Angiospermernas. *Lunds. Univ. Arsskr.* 16. 5. 86 S.
- JOHANSEN D.A., 1950: Plant embryology. *Chronica Botanica*. Waltham, Mass.
- JOHNSON E.L., 1941: Effect of x-radiation upon the growth of *Lemna minor* L. *Colorado Univ. Stud.*, D, *Phys. and Biol.* 1, 165-175.
- JONES C.N., 1963: Flora of Illinois. 2. Aufl. *Notre Dame Univ. Press*, 91-92.
- JOUKOVSKY A.V., 1935: La floraison de *Lemna*. *Beih. Bot. Zentralblatt Abt. A* 53, 620-626.
- JOVET P. und JOVET-AST S., 1966: *Lemna valdiviana* Philippi, espèce signalée pour la première fois en Europe. *Bull. Cent. Etud. Rech. Sci. Biarritz* 6, 57-64.
- 1967: Floraison, fructification, germination du *Lemna valdiviana* au Lac Marion (B.P.). *Bull. Cent. Etud. Rech. Sci. Biarritz* 6, 729-734.
- JOVET-AST S., 1968: Contribution à l'étude des eaux douces de l'Ennedi. 2. *Lemnaceae*. *Bull. Inst. Fondament. Afr. Noire* 30, 830-847.

- JOY K.W., 1969: Nitrogen metabolism of *Lemna minor*. I. Growth, nitrogen sources, and amine acid inhibition. II. Enzymes of nitrate assimilation and some aspects of their regulation. *Plant Physiol.* 44, 845-848; 849-853.
- 1971: Glutamate dehydrogenase changes in *Lemna* not due to enzyme induction. *Plant Physiol.* 47, 445-446.
 - JUNGNICKEL F., 1978: Phosphatbedarf und Mangelsymptome bei einigen axenisch kultivierten Lemnaceen. *Limnologica* 11, 469-478.
 - JURD L., GEISSMANN T.A. und SEIKEL M.K., 1957: The flavonoid constituents of *Spirodela oligorrhiza*. II. The flavone constituents. *Arch. Biochem. Biophys.* 67, 284-297.
 - KALBERLAH A., 1895: Das Blühen der Wasserlinsen. *Zeitschr. Natw.* 68, 136-138.
 - KAMSHILOV M.M., 1977: Some results of studies on the cycle of substances and biological self-purification of bodies of water. *Gidrobiol. Zh.* 13, 5-13.
 - KANAZAWA J, ISENSEE R. und KEARNEY P.C., 1975: Distribution of carbaryl and 3,5-xylyl methylcarbamate in an aquatic model ecosystem. *J. Agric. Food Chem.* 23, 760-763.
 - KANDELER R., 1955: Ueber die Blütenbildung bei *Lemna gibba* L. I. Kulturbedingungen und Tageslängenabhängigkeit. *Zeitschr. Bot.* 43, 61-71.
 - 1956: Ueber die Blütenbildung bei *Lemna gibba* L. II. Das Wirkungsspektrum von blühförderndem Schwachlicht. *Zeitschr. Bot.* 153-174.
 - 1961: Lemnaceen als Forschungsobjekt. *Ber. Phys. Med. Ges. Würzburg* 70, 81-86.
 - 1962: Die Aufhebung der photoperiodischen Steuerung bei *Lemna gibba*. *Ber. Deutsch. Bot. Ges.* 75, 431-442.
 - 1963a: Phytochrom-Wirkung auf die vegetative Entwicklung von *Lemna gibba*. *Naturwiss.* 50, 551-552.
 - 1963b: Die Aufhebung der photoperiodischen Steuerung bei *Lemna gibba*. *Ber. Deutsch. Bot. Ges.* 75, 431-442.
 - 1964a: Wirkungen des Kohlendioxyds auf die Blütenbildung von *Lemna gibba*. *Naturwiss.* 51, 561-562.
 - 1964b: Zweifache Wirkungen von Bikarbonat auf die Lichtsteuerung der Blütenbildung von *Lemna gibba*. *Ber. Deutsch. Bot. Ges.* 77, 140-142.
 - 1966: Trennung zweier Dunkelrotwirkungen bei der Lichtsteuerung der Sprossvermehrung von *Lemna gibba*. *Zeitschr. Pflanzenphys.* 54, 161-173.
 - 1967: The role of photophosphorylation in flower initiation of the long-day plant *Lemna gibba*. *European Photobiology Symp. Hvar, Yu. Book of Abstracts*, 45.
 - 1968: Blühinduktion bei Lemnaceen. *Biol. Rundschau* 6, 49-57.
 - 1969a: Hemmung der Blütenbildung von *Lemna gibba* durch Ammonium. *Planta* 84, 279-291.
 - 1969b: Förderung der Blütenbildung von *Lemna gibba* durch DCMU und ADP. *Zeitschr. Pflanzenphys.* 61, 20-28.
 - 1970: Die Wirkung von Lithium und ADP auf die Phytochromsteuerung der Blütenbildung. *Planta* 90, 203-207.
 - 1971: Die Wirkung von Ascorbinsäure, NADH und NADPH auf die Blütenbildung von *Lemna perpusilla* 6746 im Dauerlicht. *Zeitschr. Pflanzenphys.* 64, 278-280.
 - 1972: Die Wirkung von Acetylcholin auf die photoperiodische Steuerung der Blütenbildung bei Lemnaceen. *Zeitschr. Pflanzenphys.* 67, 86-92.
 - 1973: *Lemnaceae*. Vervielfältigtes Manuskript für G. HEGI: Illustrierte Flora von Mitteleuropa II/1, 3. Aufl., 22 S.

- 1975: Species delimitation in the genus *Lemna*. *Aquat. Bot.* 1, 365-376.
- 1979: Familie: *Lemnaceae*. S.F. Gray 1821, *Natur. Arrangm. Br. Fl.* 2: 729 ("Lemnaceae"). Wasserlinsengewächse. In: HEGI G., Illustrierte Flora von Mitteleuropa, Bd. II, Teil 1, Lieferung 5, 335-346. Verlag Paul Parey, Berlin/Hamburg.
- und HELDWEIN R., 1979: Significance of photosynthesis, N-deficiency, ABA and pH for synthesis of malate in *Lemna*. In: MARCELLE R., CLIJSTERS R. und VAN POUCKE M. (Eds.): Photosynthesis and Plant Development, Junk, The Hague, 103-110.
- und HÜGEL B., 1973: Blütenbildung bei *Lemna paucicostata* 6746 durch kombinierte Anwendung von Abscisinsäure und CCC. *Plant Cell Physiol.* 14, 515-520.
- 1974a: Wiederentdeckung der echten *Lemna perpusilla* Torr. und Vergleich mit *L. paucicostata* Hegelm. *Plant Syst. Evol.* 123, 83-96.
- 1974b: Development in vitro of flower primordia of *Lemnaceae*. In: Abstracts of plenary and current papers presented at the 3rd International Congress of Plant Tissues and Cell Culture, 21-26 July 1974, Univ. of Leicester, 160.
- und ROTTENBURG T., 1974: Gegensätzliche Wirkung der Sprossalterung auf die Blütenbildung bei *Lemna paucicostata* und *Lemna gibba*. *Biochim. Physiol. Pflanzen* 165, 331-336.
- 1975: Relation between photosynthesis and flowering in *Lemnaceae*. *Environ. Biol. Control Photosynth.*, Proc. Conf. 1974, 161-169.
- LÖPPERT H.G. und SCHAFETTER E., 1979: Early effects of phytochrome in *Lemna*. Abstr. 70 in: Book of abstracts, photoreceptors and plant development, Antwerpen, 22.28.7.1979.
- KAR B.K., 1947: Methaxone as eradicator of waterhyacinth and other aquatics. *Sci. Cult.* 12, 545-550.
- KARSTEN H., 1865: Ueber die Geschlechtstätigkeit der Pflanzen. *Bot. Untersuch. Phys. Lab. Berlin* 1, 84-112.
- KASINOV V.B., 1966: (Corymb inversion in irradiated colonies of the duckweed *Lemna minor*). russ. Dokl. Akad. Nauk (USSR) 167, 201-204.
- 1968: (On the inheritance of the left- and right-handedness in *Lemnaceae*). russ. Genetika (USSR) 4, N11, 11-21.
- 1969: (On the inheritance of the left- and right-handedness in *Lemnaceae* and other organisms). russ. Genetika (USSR) 5, N2, 22-29.
- 1972: (Concept of generation and the problem of variability within one generation in organisms reproducing by budding). russ. Ontogenet. (USSR) 3, 360-370.
- 1973: Handedness in *Lemnaceae*: On the determination of left and right types of development in *Lemna* clones and on its alteration by means of external influences. *Beitr. Biol. Pflanz.* 49, 321-338.
- 1978: (Genetical and morphogenetical effects of repeated 2,4-dichlorophenoxyacetic acid treatment in *Lemna minor*). russ. Bot. Journ. (USSR) 63, 986-990.
- und KASINOVA G.V., 1971a: (Preservation of radiation-induced deformation in the vegetative progeny of *Lemna gibba*). russ. Dokl. Akad. Nauk (USSR), Ser. Biol. 199, 460-463.
- 1971b: (Dynamics of radiation damage to the plant organism based on the example of common duckweed [*Lemna minor*]). russ. Radiobiol. 11, 580-586.
- 1971c: (Permanent polymorphic strains of duckweed as a model for

- studying some problems of developmental biology). russ. Ontogenez. 2, 555-564.
- 1974: The reproduction rhythm in *Lemnaceae*: A possible link with right and left handedness. Int. J. Chronobiol. 2, 47-52.
- und PAVLOVA L.E., 1970: (The interaction of sister fronds in a duckweed [*Lemna minor* L.] colony with a special reference to the right- and lefthandedness). russ. Bot. Journ. (USSR) 55, 1748-1763.
- 1975: (Hereditary reversion of chirality in duckweed under the effect of the herbicide 2,4-D: Condition of competent embryos). Russ. Tezisy Dokl. Vses. Soveshch. Embiol. 5, 78-79.
- 1977: (Dependence of morphogenetic reactions of *Lemna* frond primordia at the action of 2,4-dichlorphenoxyacetic acid on the age of primordium and its position in the plant [To the problem of ontogenetic control of heredity]). russ. Bot. Journ.(USSR) 62, 625-634.
- KATO A., 1979a: Effect of interruption of the nyctoperiod with a red to far-red-mixture of various ratios of red and far-red light on flowering in *Lemna gibba* G₃. Plant Cell Physiol. 20, 1273-1284.
- 1979b: Maintenance of high Pfr-level in the dark period in relation to flowering in *Lemna gibba* G₃. Plant Cell Physiol. 20, 1285-1293.
- und NAKASHIMA H., 1979: The effect on RNA synthesis in a long-day duckweed, *Lemna gibba* G₃, of irradiation with different ratios of red and far red light during the prolonged dark period. Zeitschr. Pflanzenphys. 91, 109-118.
- 1980: The effects of temperature and dinitrophenol on the change of the proportion of Pfr controlling RNA synthesis in *Lemna gibba* G₃ in a prolonged dark period. Zeitschr. Pflanzenphys. 98, 177-181.
- KAUFMANN N., 1868: Entwicklungsgeschichtliche Untersuchungen über die Lemnaceen. Bot. Z. 26, 382-384.
- KAVANAGH F., 1941: New photoelectric fluorimeter and some applications. Industr. Engin. Chem. Ann. 13, 108-111.
- KEARNY T.H. und PEEBLES R.H., 1973: Arizona Flora, 4. ed., Univ. Calif. Press, Berkeley, 165-166.
- KEATES R.A.B. und TREWAVAS A.J., 1974: Protein kinase activity associated with isolated ribosomes from peas and *Lemna*.Plant Physiol. 54, 95-99.
- KEDDY P.A., 1976: Lakes as islands: The distributional ecology of two aquatic plants, *Lemna minor* L. and *L. trisulca* L. Ecology 57, 353-359.
- KELLEHER W.J. und GRISEBACH H., 1971: Hydride transfer in the biosynthesis of uridine diphospho-apiose from uridine diphospho-D-glucuronic acid with an enzyme preparation of *Lemna minor*. Eur. J. Biochem. 23, 136-142.
- KELLY D.G., 1980: Toxic algae in dairy lagoons. Polykopie, Baton Rouge. 4 S.
- KENNEY-WALLACE G. und BLACKMAN G.E., 1972: The uptake of growth substances. XIV. Patterns of uptake of *Lemna minor* of phenoxyacetic and benzoic acids following progressive chlorination. J. Exp. Bot. 23, 114-127.
- KEPCZYNSKI K., 1960: Nowe stanowiska wolfii bezkorzeniowej (*Wolffia arrhiza* (L.) Wimm.) Zesz. Nauk. Uniw. Torun. Biol. 5, 115-124.
- 1968: Nowe stanowiska wolfii bezkorzeniowej (*Wolffia arrhiza* (L.) Wimm.) w powiecie wabrzeskim. Zesz. Nauk. Uniw. Torun. Biol. 11, 269-272.
- 1972: (Weitere Standorte von *Wolffia arrhiza* (L.) Wimm. auf dem Dobrzyn-Diluvialplateau und ihre Teilnahme in verschiedenen Pflanzen-gesellschaften.) pol. Zesz. Nauk. Uniw. Torun. Biol. 15, 11-18.

- und FABISZEK S., 1972: (*Salvinia natans* (L.) All. und *Spirodela-Salvinietum* Slavnic 1956 in der Woiwodschaft Bydgoszcz.) pol. Zesz. Nauk. Univ. Torun. Biol. 15, 33-40.
- KERN H. und NAEF-ROTH S., 1975: Zur Bildung von Auxinen und Cytokininen durch *Taphrina*-Arten. Phytopath. Z. 83, 193-222.
- KESER M., 1955: Papierchromatographische Untersuchungen über das Auftreten freier und gebundener Aminosäuren in höheren Pflanzen. Planta 45, 273-288.
- KESSLER B. und STEINBERG N., 1973: Cyclic mononucleotide-gibberellin interactions in the flowering and proliferation of the long-day plant *Lemna gibba* G3. Physiol. Plant. 28, 548-553.
- KHUDAIRI A.K. und HEMBERG T., 1974: Serine involvement in the flowering of *Lemna* during photoperiodic induction. J. Exp. Bot. 25, 740-744.
- und MAENG J., 1973: Studies on the flowering mechanism in *Lemna*. II. The dark reaction of the short-day plant *Lemna perpusilla*. Physiol. Plant. 28, 271-277.
- KHURANA J.P. und MAHESHWARI S.C., 1978: Induction of flowering in *Lemna paucicostata* by salicylic acid (a phenol). Plant Sci. Lett. 12, 127-132.
- KIENER W.B., 1944: Duckweed in relation to wildfowl in Nebraska. Proc. Nebraska Acad. Sci. 54th annual meeting, 11.
- KINDEL P.K., 1973: Occurrence and metabolism of D-apiose in *Lemna minor*. Biogenesis Plant Cell Wall Polysaccharides, Proc. Symp. 1972, 85-94.
- GUSTINE D.L. und WATSON R.R., 1970: Enzymatic synthesis of UDP-D-Apiose ^{14}C . Plant Physiol. 46 (Suppl.), 27.
- und WATSON R.R., 1973: Synthesis, characterization and properties of uridine 5'-(α -D-apio-D-furanosyl pyrophosphate). Biochem. J. 133, 227-241.
- KIRKLAND L.L., 1974: Photoperiodic inhibition of flower development in *Lemna perpusilla* 6746. Diss. State Univ. Binghamton, N.Y. Univ. Microfilms Int., Ann Arbor, Mich., Order No. 74-20,689; 689 S. Diss. Abstr., Int. B, 35, 1525-1526.
- KLEINSCHMIDT H.E., 1969: Effect of granular 2,4-D on some water-weeds and its persistence. Queensl. J. Agr. Anim. Sci. 26, 587-592.
- KLOSE H., 1963: Zur Limnologie von *Lemna*-Gewässern. Wiss. Z. Univ. Leipzig, Math.-Natur. Reihe 12, 233-259.
- KNAPP R. und STOFFERS A.L., 1962: Ueber die Vegetation von Gewässern und Ufern im mittleren Hessen und Untersuchungen über den Einfluss von Pflanzen auf Sauerstoffgehalt, Wasserstoff-Ionen-Konzentration und die Lebensmöglichkeit anderer Gewächse. Ber. Oberhess. Ges. Nat.-Heilkunde, Giessen, 32, 90-141.
- KNUTH P., 1909: Handbook of flower pollination 3, order 121: *Lemnaceae* (translat. by J.R.A. Davis), Clarendon Press, Oxford.
- KNYPL J.S., 1976: Culture of *Spirodela oligorrhiza* in ammonium-media buffered with calcium carbonate or calcium phosphate. Biochem. Physiol. Pflanzen 170, 243-252.
- 1979: Molecular forms of phosphatase and ribonuclease in phosphate deficient and N,N-dimethylmorpholinium chloride treated *Spirodela oligorrhiza* (*Lemnaceae*). Acta Soc. Bot. Pol. 48, 65-85.
- 1980: Mutual exchange of phosphate amongst phosphate-deficient *Spirodela oligorrhiza* plantlets. Zeitschr. Pflanzenphysiol. 96, 49-58.
- und JANAS K.M., 1980: Stimulatory effect of fusicoccin on growth and ribonuclease activity in *Spirodela oligorrhiza*. Plant Sci. Lett. 19, 43-46.

- KOBUSZEWSKA D.M., 1973: Experimentally increased fish stock in the pond type Lake Warniak. XIII. Distribution and biomass of the Lemnaceae and the fauna associated with them. *Ekol. Pol.* 21, 611-629.
- KOCH W., 1932: Beitrag zur Lemnaceen-Flora Mittel- und Südamerikas. *Ber. Schweiz. Bot. Ges.* 41, 113-118.
- 1933: *Spirodela biperforata*, eine neue Teichlinse aus Surinam. *Ber. Schweiz. Bot. Ges.* 42, 186-189.
 - 1952: Zur Flora der oberitalienischen Reisfelder. *Ber. Schweiz. Bot. Ges.* 62, 628-663.
 - 1954: Pflanzensoziologische Skizzen aus den Reisfeldgebieten des Piemont (Po-Ebene). *Vegetatio* 5-6, 487-493.
- KOHLER A. und ZELTNER G.-H., 1974: Verbreitung und Ökologie von Mikrophyten in Weichwasserflüssen des Oberpfälzer Waldes. *Hoppea* 33, 171-232.
- KOIE A. und KOIE M., 1939: Udbredelsen af Geraniaceae, Araceae, Lemnaceae og Droseraceae i Denmark. *Bot. Tidskr.* 45, 73-96.
- KOLKWITZ R., 1933: Zur Ökologie der Pflanzenwelt Brasiliens. *Ber. Deutsch. Bot. Ges.* 51, 396-406.
- KONDO T., 1978: Diurnal change in leakage of electrolytes from a long-day duckweed *Lemna gibba* G3, under osmotic stress induced by water treatment. *Plant Cell Physiol.* 19, 985-996.
- und NAKASHIMA H., 1979: Content of adenosine phosphate compounds in a long-day duckweed, *Lemna gibba* G3, under different light and nutritional conditions. *Physiol. Plant.* 45, 357-362.
 - und TSUDZUKI T., 1978: Rhythm in potassium uptake by a duckweed, *Lemna gibba* G3. *Plant Cell Physiol.* 19, 1465-1474.
 - 1980: Phase progress under low temperature treatment of the potassium uptake rhythm in a duckweed, *Lemna gibba* G3. *Plant Cell Physiol.* 21, 95-103.
 - 1980a: Energy supply for potassium uptake rhythm in a duckweed, *Lemna gibba* G3. *Plant Cell Physiol.* 21, 433-443.
- KOPP A., FELLER U. und ERISMANN K.H., 1974: Untersuchungen zur Regulation der Stickstoffassimilation von *Lemna minor* im Übergang von Ammonium- auf Nitrat- bzw. Nitrat- auf Ammoniumernährung unter Photosynthesebedingungen. *Zeitschr. Pflanzenphys.* 73, 456-460.
- KORDAKOW J., 1970: Nowe stanowiska *Limnanthemum nymphoides* (L.) Link, *Salvinia natans* (L.) All., *Lemna gibba* L. i *Wolffia arrhiza* (L.) Wimm. nad dolna Wisła. *Bad. Fizjogr. Pol. Zach. Ser. B* 23, 243-250.
- KORDUS-WALANKIEWICZ B., 1978: The new stands of *Wolffia arrhiza* (L.) Wimm. on Wysoczyzna Siedlecka. *Fragm. Flor. Geobot.* 24, 273-275.
- KOSTYTSCHEW S. und BERG V., 1929: Die Form der Calciumverbindung in lebenden Pflanzengeweben. *Planta E* 8, 55-67.
- KRAJNČIĆ B., 1972: (Photoperiodic reactions in Lemnaceae of north-eastern Slovenia) slov. M. Sc. thesis, Univ. Zagreb, 106 S.
- 1974a: (Study of photoperiodic reactions in Lemnaceae of Slovenia) slov. IV. Kongres Biologa Jugoslavije, Sarajevo, Rez. Ref., 84.
 - 1974b: Photoperiodic responses of Lemnaceae from Northeastern Slovenia. *Acta Bot. Croat.* 33, 81-88.
 - 1974c: (Contribution to the knowledge of Lemnaceae from northeastern Slovenia) slov. Biol. Vestn. 22, 21-28.
 - 1976: Lemnaceae in the region of Slovenia. *Biol. Vestn.* 24, 133-144.
 - und DEVIDÉ Z., 1979: Flower development in *Spirodela polyrrhiza* (Lemnaceae). *Plant Syst. Evol.* 132, 305-312.

- 1980: Report on photoperiodic responses in *Lemnaceae* from Slovenia. Ber. Geobot. Inst. ETH, Stiftung Rübel, 47, 75-86.
- KRAUSE A., 1979: Zur Kenntnis des Wasserpflanzenbesatzes der westdeutschen Mittelgebirgsflüsse Fulda, Ahr, Sieg und Saar. Dechenia 132, 15-28.
- KRAUSE J., 1978: Die Zimtsäurederivate von *Spirodela polyrrhiza* (L.) Schleiden. Zeitschr. Pflanzenphys. 88, 465-470.
- und STRACK D., 1979: Malonyl cyanidin 3-monoglucoside in *Spirodela polyrrhiza* (L.) Schleiden. Zeitschr. Pflanzenphys. 95, 183-187.
- KRAUSS F., 1845: Pflanzen des Cap- und Natallandes. Flora 28, 344.
- KRSNIK-RASOL M. und RENDIĆ L., 1977: (The effect of some triazine derivates on the growth and development of duckweeds) kroat. Acta Bot. Croat. 36, 75-82.
- KRZECHOWSKA M. und ZIMNA J., 1972: (Effect of kinetin and β-indolylacetic acid on the content of nitrogen compounds in *Lemna minor* cultures) pol. Zesz. Nauk. Uniw. Lodz., Ser. 2, 47, 95-100.
- BYTNIEWSKA K. und MACIEJEWSKA-POTAPCZYK W., 1975: Attempts at establishing the culture conditions for *Lemna minor* L. Acta Soc. Bot. Pol. 44, 243-254.
- KUCHAR K.W., 1954: Bakteriologische und limnologische Untersuchungen an einem Lemnagewässer. Arch. Hydrobiol. 49.
- KURIMO U., 1970: Effect of pollution on the aquatic macroflora of the Varkans area, Finnish Lake District. Ann. Bot. Fenn. 7, 213-254.
- KURZ H. und CROWSON D., 1949: Flowering of *Wolffia floridana* (J.D. Smith) Thompson. Quart. J. Florida Acad. Sci. 11, 87-98.
- KURZ S., 1867a: Enumeration of Indian *Lemnaceae*. J. Linn. Soc. Bot. 9, 264-268.
- 1867b: Enumeration of Australian *Lemnaceae*. Jour. Bot. 5, 115.
- 1871: On some new or imperfectly known Indian plants. 109. *Lemna tenera*. J. As. Soc. Bengal 40 (II), 78.
- KÜSEL H., 1955: Die Entelinse (*Wolffia arrhiza* Wimm.), eine neue Pflanze der nordwestdeutschen Flora. KÜSEL: Mitt. 1955(1), 10-11. Lahausen.
- LACOR M.A.M., 1968: Flowering of *Spirodela polyrrhiza* (L.). Acta Bot. Neerl. 17, 357-359.
- 1969: On the influence of gibberellic acid and kinetin on the germination of turions of *Spirodela polyrrhiza* (L.). Acta Bot. Neerl. 18, 550-554.
- 1970: Some physiological and morphogenetic aspects of flowering of *Spirodela polyrrhiza* (L.) Schleiden. Acta Bot. Neerl. 19, 53-60.
- LAGERBERG T., 1947: Vilda Växten i Norde, 1, *Lemnaceae*. Natur och Kultur, Stockholm. 302-309.
- LANCASTER T.L., 1930: On the occurrence of *Lemna oligorrhiza* Kurz in New Zealand. Trans. Proc. New Zealand Inst. 60, 563-564.
- LANDNER L. und JERNELOV A., 1969: Cadmium in aquatic systems. In: Metals and ecology, Symposium. Ecol. Res. Comm. Bull. 5, 47-54.
- LANDOLT E., 1955: Ueber das Wachstum in der Dunkelheit bei einigen Lemnaceen. Verh. Schweiz. Natf. Ges. 135, 135-136.
- 1957: Physiologische und ökologische Untersuchungen an Lemnaceen. Ber. Schweiz. Bot. Ges. 67, 271-410.
- 1975: Morphological differentiation and geographical distribution of the *Lemna gibba* - *Lemna minor* group. Aquat. Bot. 1, 345-363.
- 1979: *Lemna minuscula* Herter (= *L. minima* Phil.), eine in Europa neu eingebürgerte amerikanische Wasserpflanze. Ber. Geobot. Inst. ETH, Stiftung Rübel, 46, 86-89.

- 1980: Key to the determination of taxa within the family of *Lemnaceae*. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 70, 13-21.
- 1980a: Description of six new species of *Lemnaceae*. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 70, 22-29.
- 1981a: Die Familie der *Lemnaceae*, eine monographische Studie. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 71 (in Vorbereitung).
- 1981b: Distribution patterns of *Lemnaceae* in the United States of America. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 77 (in Vorbereitung).
- und URBANSKA-WORYTKIEWICZ K., 1980: List of the studied *Lemnaceae* samples: origin and chromosome numbers. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 70, 205-247.
- und WILDI O., 1977: Oekologische Felduntersuchungen bei Wasserlinsen (*Lemnaceae*) in den südwestlichen Staaten der USA. Ber. Geobot. Inst. ETH, Stiftung Rübel, 44, 104-146.
- DE LANGE L., 1972: An ecological study of ditch vegetation in the Netherlands. Diss. Amsterdam. 112 S.
- 1974: Translocation experiments in the field with the *Lemna gibba* - *Lemna minor* complex. Acta Bot. Neerl. 23, 109-112.
- 1975: Gibbosity in the complex *Lemna gibba/Lemna minor*: Literature survey and ecological aspects. Aquat. Bot. 1, 327-332.
- und PIETERSE A.H., 1973: A comparative study of the morphology of *Lemna gibba* L. and *Lemna minor* L. Acta Bot. Neerl. 22, 510-517.
- und SEGAL S., 1968: Over het onderscheid en de oecologie van *Lemna minor* en *Lemna gibba*. Gorteria 4, 5-12.
- und WESTINGA E., 1979: The distinction between *Lemna gibba* and *Lemna minor* on the basis of vegetative characters. Acta Bot. Neerl. 28, 169-176.
- LASSALLES J.P., AYADI A., MONNIER A., STELZ T. und THELLIER M., 1973: Application des relations et de la loi d'Onsager à la formulation d'interactions compétitives lors de l'absorption d'ions alcalins par la *Lemna minor*. C. R. Acad. Sci. Paris, D, 276, 1053-1056.
- LAUBE H.R. und WOHLER J.R., 1973: Studies on the decomposition of a duckweed (*Lemnaceae*) community. Bull. Torr. Bot. Club 100, 238-240.
- LAUTNER V. und MÜLLER Z., 1954: (Die Futterwerte einiger unserer Wasserpflanzen I) tschech. Sbornik Cesk. Akad. Zemedl. Ved 27A, 333-354.
- LAWALRÉE A., 1943: La multiplication végétative des Lemnacées en particulier chez *Wolffia arrhiza*. Cellule 49, 338-382.
- 1945: La position systématique des Lemnacées et leur classification. Bull. Soc. Roy. Bot. Belg. 77, 27-38.
- 1952: L'embryologie des *Lemnaceae*. Observations sur *Lemna minor* L. Cellule 54, 305-326.
- 1952a: Compositae, Leaceae, Lemnaceae et Vitaceae. Exploration hydrobiologique du lac Tanganyika. Inst. Roy. Sci. Nat. Belg., Résultat sci. 4, 53-82.
- 1961: La pollination de *Lemna minor* L. Natural. Belg. 42, 164.
- LAWSON T.B., BRAUD H.J. und WRATTEN F.T., 1974: Methods of drying duckweed, *Lemnaceae*. Am. Soc. Agr. Eng., Winter Meeting, Chicago. 12 S.
- LEAL A.R., 1951: La floracion de *Lemna gibba* L. y *Lemna Parodiana* Giard. (Lemnaceas) en Mendoza. Rev. Facultad Cienc. Agr. 3, 1-8.
- LECHEVALLIER D., 1966: Les lipides des Lemnacées: Analyse des acides gras des lipides de frondes de *Spirodela polyrrhiza*. C. R. Acad. Sci. Paris, D, 263, 1849-1852.

- 1967: Analyse des lipides polaires des frondes de *Spirodela polyrrhiza*. C. R. Acad. Sci. Paris, D, 264, 2110-2113.
- 1970: Sur les stérols de frondes de *Spirodela polyrrhiza* (L.) Schleiden et de *Lemna trisulca* L. C. R. Acad. Sci. Paris, D, 271, 591-594.
- 1977a: Lipides, nucléotides pyridiniques et nucléotides adényliques de tissus et de plastes isolés de Spriodèles cultivées sur milieu enrichi en calcium. Physiol. Vég. 15, 95-119.
- 1977b: Effets du polyéthylène glycol sur les lipides et les lipochromes des colonies de Spirodèle. Physiol. Vég. 15, 384-402.
- BAHL J. und MONÉGER R., 1971: Lipids components of chloroplasts isolated from *Spirodela polyrrhiza* light cultivated on morose-containing media. In: FORTI F., AVRON M. und MELANDRI A. (Eds.), Proc. II. Int. Congr. Photosynth. Res., 1647-1652.
- VERMEERSCH J. und MONÉGER R., 1972: Microanalyses du NADP et du NAD réduits et oxydés dans les tissus foliaires et dans les plastes isolés de Spirodèle et de blé. 2: Méthodes d'analyses des nucléotides pyridiniques de tissus végétaux. Application à l'étude des effets du saccharose, de la lumière rouge et de l'obscurité. Physiol. Vég. 15, 63-93.
- LEGGETT W.H., 1870a: *Lemna*. Bull. Torr. Bot. Club 1, 29.
- 1870b: *Spirodela*. Bull. Torr. Bot. Club 1, 37-38.
- LEINBACH E.D., 1976: Characterization of a particulate UDP-Galacturonate: acceptor D-galacturonosyltransferase from *Lemna minor* and studies of the physical properties of the product. Univ. Microfilms Int., Ann Arbor, Mich., Order No. 76-13,973. Diss. Abstr. Int. B, 36, 6134.
- LEONARD S.W., 1972: New records and notes on the flora of the Carolinas. J. Elisha Mitchell Sci. Soc. 88, 265-266.
- LEUCHTMANN A., 1979: Physiologische Differenzierungen in der Familie der Lemnaceen. Diplomarbeit Geobot. Inst. ETH, Stiftung Rübel, 86 S.
- LEUTE G.H. und MÜLLER I.E., 1979: *Potamogeton acutifolius* Link und *Lemna trisulca* L., zwei verschollen geglaubte Vertreter der Hydrophytenflora in Kärnten wiederentdeckt. Carinthia II, 169/89, 137-142.
- LEWIS W.M. und BENDER M., 1961: Effect of a cover of duckweeds and the alga *Phitophora* upon the dissolved oxygen and free carbon dioxide of small ponds. Ecology 42, 602-603.
- LI H.-L., LIU T., HUANG I., KOYAMA T. und DE VOL C.E., 1978: Flora of Taiwan 5, 816-818. Epoch Publ. Co., Taipei, Taiwan.
- LID J., 1952: Norsk Flora. Norske Samlaget, Oslo. 180.
- LIEBERT H.-P., 1977: Influence of abscisic acid on growth and mineral contents in *Lemna gibba* L. Biol. Rundsch. 15, 180-182.
- LINDEMANN W., 1951: The influence of phosphate on the photosynthesis of *Lemna minor*. Proc. Kon. Acad. Wetensch. C 54, 287-295.
- 1952: Over de betekenis van fosfaat in de fotosynthese van *Lemna minor* L. Thesis, Univ. Amsterdam.
- 1972: Reactivation of photosynthesis in dependence on wavelength in phosphate deficient *Lemna minor*. Acta Bot. Neerl. 21, 86-94.
- 1973: Emerson enhancement effect and the reactivation of photosynthesis in phosphate deficient *Lemna minor*. Acta Bot. Neerl. 22, 553-568.
- 1979: Inhibition of photosynthesis in *Lemna minor* by illumination during chilling in the presence of oxygen. Photosynthetica 13, 175-185.

- VON LINNÉ C., 1753: *Species plantarum* 2, 970. Stockholm.
- 1771: *Mantissa Plantarum* 2, 294. Stockholm.
- LIPKIN Y., 1973: *Wolffia arrhiza* (L.) Hork. ex Wimmer on the Golan Plateau. Israel J. Bot. 22, 175-177.
- LIU L.C. und CEDENO-MALDONADO A., 1974: Effects of fluometron, prometryne, ametryne and diuron on growth of two *Lemna* species. J. Agric. Univ. Puerto Rico 58, 483-488.
- LOCK J.M., 1973: The aquatic vegetation of Lake George, Uganda. Phytocoenol. 1, 250-262.
- LOCKHART W.L. und BLOUW A.P., 1979: Phytotoxicity tests using duckweed *Lemna minor*. Can. Spec. Publ. Fish. Aquat. Sci. 44, 112-118.
- LODKINA M.M., 1976: (Peculiar features of pollen sac development in some species of *Najadaceae* Juss. and *Lemnaceae* S. Gray) russ. Bot. Journ. (USSR) 61, 1536-1546.
- LOEFFELHARDT W. und KINDL H., 1979: Conversion of 4-hydrophenylpyruvic acid into homogentisic acid at the thylakoid membrane of *Lemna gibba*. FEBS Lett. 104, 332-334.
- LOHAMMAR G., 1938: Wasserchemie und höhere Vegetation schwedischer Seen. Symb. Bot. Ups. 3/1, 252 S.
- 1940: Die Verbreitung von *Lemna trisulca* in Fennoskandinavien und Dänemark. Int. Ver. Theor. Angew. Limnologie 9, 204-290.
- VAN LOON L.C., TREWAVAS A. und CHAPMAN K.S.R., 1975: Phosphorylation of chromatin-associated proteins in *Lemna* and *Hordeum*. Plant Physiol. 55, 288-292.
- LOOS W., 1962: Einfluss der Gibberellinsäure auf die vegetative Vermehrung und das Wurzelwachstum von *Lemna minor* L. Öyton 18, 133-136.
- LÖPPERT H., 1979: Evidence for electrogenic proton extrusion by subepidermal cells of *Lemna paucicostata* 6746. Planta 144, 311-316.
- und KRONBERGER W., 1979: Control of nitrate uptake by photosynthesis in *Lemna paucicostata* 6746. In: MARCELLE R., CLIJSTERS H. und VAN POUCKE M. (Eds.), Photosynth. Plant Devel., Proc. Conf. 1978, 301-308. Junk, The Hague.
- und KANDELER R., 1977: Correlation between nitrate uptake and alkalinisation by *Lemna paucicostata* 6746. Colloque du C.N.F.S. 258, 283-288. Paris et Mont Saint Argnan.
- 1978: Phytochrome-mediated changes in the membrane potential of subepidermal cells of *Lemna paucicostata* 6746. Planta 138, 133-136.
- LUDWIG F., 1909: Lemnaceen. In: VON KIRCHNER O., LOEW E. und SCHROETER C., Lebensgeschichte der Blütenpflanzen Mitteleuropas 1(3), 57-80.
- LÜÖND A., 1978: Unterschiedliche Nährstoffansprüche nahverwandter Arten und ihre ökologische Bedeutung. Diplomarbeit Geobot. Inst. ETH, Stiftung Rübel, 84 S.
- 1980: Effects of nitrogen and phosphorus upon the growth of some *Lemnaceae*. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 70, 118-141.
- LUTHER H., 1948: Die Funde von blühenden Lemnaceen in Finnland. Mem. Soc. Fauna Flora Fenn. 24, 161-170.
- 1949: Vorschlag zu einer ökologischen Grundeinteilung der Hydrophyten. Acta Bot. Fenn. 44, 3-15.
- 1951: Verbreitung höherer Wasserpflanzen im brackisch Wasser Finnlands. Acta Bot. Fenn. 50, 1-370.
- MACIEJEWSKA-POTAPCZYK W., KONOPSKA L. und NARZYSMSKA E., 1970: Proteins in duckweed (*Lemna minor* L.). Acta Soc. Bot. Pol. 39, 251-255.

- und OLECHNOWICZ K., 1975: Protein in *Lemna minor* L. Biochem. Physiol. Pflanz. 167, 105-108.
- und RESZKA J., 1976: Influence of IAA and kinetin on *Lemna minor* L. proteins. Acta Univ. Nicolai Copernici Nauki Mat.-Przyr. 37, 183-186.
- MAENG J., 1973: Biochemical and physiological studies on the flowering mechanism of two species of *Lemna*. Diss. N.E. Univ. Univ. Microfilms Int., Ann Arbor, Mich., Order No. 73-28,834; 150 S. Diss. Abstr. Int. B, 34, 2496-2497.
- 1976: (Studies on inhibition factors and the role of phytochrome in the floral induction in short-day plants) kor. Korean J. Bot. 19, 14-18.
- 1977: (Studies on the effect of 2-chloroethylphosphoric acid [etephon] on the floral induction to photoperiodic plants: I. Inhibition of flowering in *Lemna perpusilla* 6746 by etephon) kor. Korean J. Bot. 20, 77-82.
- KHUDAIRI A.K., 1973: Studies on the flowering mechanism in *Lemna*. I. Amino acid changes during flower induction. Physiol. Plant. 28, 264-270.
- MAHESHWARI S.C., 1954: The embryology of *Wolffia*. Phytomorphology 4, 355-365.
- 1956a: Endosperm and seed of *Wolffia*. Nature 178, 925-926.
- 1956b: The endosperm and embryo of *Lemna* and systematic position of the Lemnaceae. Phytomorphology 6, 51-55.
- 1958a: The Lemnaceae. A contribution to their biology, morphology and systematics. D. Sc. Thesis, Univ. Delhi.
- 1958b: *Spirodela polyrrhiza*: The link between the aroids and the duck-weeds. Nature 181, 1745-1746.
- 1959: Systematic position of the family Lemnaceae. Abstr. Int. Bot. Congr. Montreal 2, 246-247.
- 1963: In vitro control of flowering in *Wolffia microscopica*. Nature 198, 99-100.
- und CHAUHAN D.S., 1963: In vitro control of flowering in *Wolffia papulifera*. Nature 198, 99.
- und GUPTA S., 1967: Induction of flowering in *Lemna paucicostata*, a short-day plant, by chelating agents and iron. Planta 77, 95-98.
- und KAPIL R.N., 1963a: Morphological and embryological studies on the Lemnaceae. I. The floral structure and gametophytes of *Lemna paucicostata*. Am.J. Bot. 50, 677-686.
- 1963b: Morphological and embryological studies on the Lemnaceae. II. The endosperm and embryo of *Lemna paucicostata*. Am. J. Bot. 50, 907-914.
- 1964: Morphological and embryological studies on the Lemnaceae. III. The seed and seedling of *Lemna paucicostata*. Ind. Bot. Soc. 43, 270-277.
- und MAHESHWARI N., 1963: The female gametophyte, endosperm and embryo of *Spirodela polyrrhiza*. Beitr. Biol. Pflanzen 39, 179-188.
- und SETH P.N., 1966: Induction of flowering in *Wolffia microscopica* by the iron salt of ethylenediamine-di-o-hydroxyphenylacetic acid (Fe-EDDHA). Zeitschr. Pflanzenphys. 55, 89-91.
- 1967: Effects of kinins and an iron chelate on the growth and flowering of *Wolffia microscopica*. Proc. Int. Conf. Plant Growth Substances, Rostock.
- und VENKATARAMAN R., 1966: Induction of flowering in a duckweed -

- Wolffia microscopica* - by a kinin, zeatin. *Planta* 70, 304-306.
- 1967: Effects of kinins and an iron chelate on the growth and flowering of *Wolffia microscopica*. *Proc. Int. Conf. Plant Growth Substances*, Rostock.
- MAIRE R., 1957: Flore de l'Afrique du Nord 4, 249-254. P. Lechevalier, Paris.
- MALKIN R. und POSNER H.B., 1978: On the site of function of the Rieske iron-sulfur center in the chloroplast electron transport chain. *Biochim. Biophys. Acta* 501, 552-554.
- MARIE-VICTORIN Frère, 1931: Les Spadiciflores du Québec (Aracées, Lemnacées). *Contr. Lab. Bot. Univ. Montréal* 19, 1-60.
- MARTIN G., 1955: Action antitoxique des ions Mg^{++} à l'égard des ions Zn^{++} chez *Lemna minor*. *C. R. Soc. Biol.* 149, 2099-2102.
- 1963a: Différence spécifiques entre les besoins quantitatifs en chlore de *Lemna minor*, *L. perpusilla* et *Spirodela polyrhiza*. *Plant and Soil* 18, 258-266.
- 1963b: Nécessité du chlore dans la nutrition de *Spirodela polyrhiza* cultivé en conditions partiellement hétérotrophes. *C. R. Acad. Sci. Paris* 257, 294-296.
- 1964: Effets de la L-cystine sur la croissance de *Spirodela polyrhiza* en conditions hétérotrophes. *C. R. Acad. Sci. Paris* 258, 5757-5759.
- 1965: Nécessité du chlore dans la nutrition de *Spirodela polyrhiza* cultivé en conditions hétérotrophes. *C.R. Acad. Sci. Paris* 260, 5928-5930.
- und LAVOLLAY J., 1955: Action antitoxique des ions Mg^{++} à l'égard des ions Zn^{++} chez *Lemna minor*. *C. R. Soc. Biol.* 149, 2099-2102.
- 1958a: Le chlore, oligo-élément indispensable pour *Lemna minor*. *Experientia* 14, 333-334.
- 1958b: Sur la spécificité de la carence en chlore chez *Lemna minor*. *C. R. Soc. Biol.* 152, 241-244.
- 1959: Sur la spécificité de la carence en chlore chez *Lemna minor*. Recherches sur l'utilité de l'iode. *C. R. Soc. Biol.* 153, 1130-1133.
- MASCARO L.J., jr., 1975: Characterization of apiogalacturonans formed by a cell-free system for *Lemna minor*. *Univ. Microfilms Int.*, Ann Arbor, Mich., Order No. 75-27,298; 190 S. *Diss Abstr. Int. B*, 36, 2777-2778.
- und KINDEL P.K., 1977: Characterization of (^{14}C) apiogalacturonans synthesized in a cell-free system from *Lemna minor*. *Arch. Biochem. Biophys.* 183, 139-148.
- MASON H.L., 1938: The flowering of *Wolffiella lingulata* (Hegelm.) Hegelm. *Madroño* 4, 241-251.
- 1957: A flora of the marshes of California. Univ. of Calif. Press, Berkeley and Los Angeles. 327-343.
- MASON R., 1950: Water plants of New Zealand. Hutchinson et al., Wellington.
- MATHESON R. und HINMAN E.H., 1929: Further studies on *Chara* spp. and other aquatic plants in relation to mosquito breeding. *Am. J. Trop. Med.* 9, 249-266.
- MATVEEV V.I., 1963: (Blooming in *Lemna gibba* L.) russ. *Bot. Journ. (USSR)* 48, 272.
- 1977: (On the flowering of duckweeds [Lemnaceae] in waterbodies of Trans-Volga territories) russ. *Bot. Journ. (USSR)* 62, 1498-1500.
- MC CANN C., 1942: Observation on Indian duckweeds, Lemnaceae. *J. Bomb. Nat. Hist. Soc.* 43, 148-162.
- MC CLURE J.W., 1964: Taxonomic significance of the flavonoid chemistry and the morphology of Lemnaceae in axenic culture. Thesis Univ. Texas,

- Austin. 255 S. Diss. Abstr. 25, 4928-4929.
- 1967: Flavonoid variation in *Lemna perpusilla* from different laboratories. Plant Cell Physiol. 8, 523-526.
 - 1968: Photocontrol of *Spirodela intermedia* flavonoids. Plant Physiol. 43, 193-200.
 - 1970: Secondary constituents of aquatic angiosperms. In: HARBORNE J.B. (Ed.), Phytochemical Phylogeny. Acad. Press, New York und London. 233-268.
 - 1975: The applicability of polyphenolic data to systematic problems in the Lemnaceae. Aquat. Bot. 1, 395-405.
 - und ALSTON R.E., 1963: Chromatographic pattern of phenolic constituents in 18 duckweed spp. (Lemnaceae). Am. J. Bot. 50, 636.
 - 1964a: Patterns of selected chemical components of *Spirodela oligorrhiza* formed under various conditions of axenic culture. Nature 201, 311-313.
 - 1964b: Glycoflavonoids of *Spirodela* species and their taxonomic implications. Am. J. Bot. 51, 685-686.
 - 1966: A chemotaxonomic study of Lemnaceae. Am. J. Bot. 53, 849-860.
 - und BLAZEY E.B., 1968: The distribution and significance of lignin in the Lemnaceae. Am. J. Bot. 55, 240-245.
- MC COMBS P.J.A. und RALPH R.K., 1972: Protein, nucleic acid and starch metabolism in the duckweed, *Spirodela oligorrhiza*, treated with cytokinins. Biochem. J. 129, 403-417.
- MC DONALD I.R., 1975: Effect of vacuum infiltration on photosynthesis gas exchange in leaf tissue. Plant Physiol. 56, 109-112.
- MC HARGUE J.S. und COLFUE R.K., 1932: Manganese essential for growth of *Lemna major*. Plant Physiol. 7, 697-703.
- MC LAREN J.S. und SMITH H., 1976: The effect of abscisic acid on growth, photosynthetic rate and carbohydrate metabolism in *Lemna minor* L. New Phytol. 76, 11-20.
- 1977: Effect of abscisic acid on photosynthetic products of *Lemna minor*. Phytochemistry 16, 219-221.
- MC LAY C.L., 1973: Wind-blown dust as a source of nutrients for aquatic plants. Environ. Pollut. 5, 173-180.
- 1974: The distribution of duckweed *Lemna perpusilla* in a small southern Californian lake: An experimental approach. Ecology 55, 262-276.
 - 1976: The effect of pH on the population growth of three species of duckweed: *Spirodela oligorrhiza*, *Lemna minor* and *Wolffia arrhiza*. Freshwater Biol. 6, 125-136.
- MC MINN A., 1895: Structure of the vegetative shoots of *Spirodela polyrrhiza*. Univ. Wisconsin.
- MELARAGNO J.E. und WALSH M.A., 1976: Ultrastructural features of developing sieve elements in *Lemna minor*: The protoplast. Am. J. Bot. 63, 1145-1157.
- MENDICINO J. und ABOU-ISSA H., 1974: Conversion of UDP-D-glucuronic acid to UDP-D-apiose and UDP-D-xylose by an enzyme isolated from *Lemna minor*. Biochem. Biophys. Acta 364, 159-172.
- MENDIOLA N.B., 1919: Variation and selection within clonal lines of *Lemna minor*. Genetics 4, 151-182.
- MENSCHICK R., 1970: Untersuchungen über den durch die Stickstoffquelle beeinflussbaren Flavonoidhaushalt der Sommertglieder und Winterknospen von

- Spirodela polyrrhiza* (L.) Schleid. Diss. Math.-Nat. Fak. Univ. Münster.
- MÉRIAUX J.-L., 1978: Etude analytique et comparative de la végétation aquatique d'étangs et marais du Nord de la France (Vallée de la Sensée et Bassin Houiller du Nord-Pas de Calais). Docum. Phytosoc. N.S. 3, 1-244.
- MEYER G.F.W., 1818: Primitiae Florae Essequeboensis adjectis descriptionibus centum circiter stirpium novarum, observationibusque criticus. H. Dieterich, Göttingen. 262.
- MICHELI P.A., 1729: Nova plantarum genera. Florentiae.
- MIESNITZ G., 1956: Die Wasserlinsen auf Teichen. Allg. Fischereizeitung 81, 112.
- MIKI S., 1934: On fresh water plants new to Japan. Bot. Mag. 48, 326-337.
- MILDE C.A., 1853: *Wolffia Michelii* Hork. (*Lemna arrhiza* L.). Bot. Z. 11, 896-897.
- MIYABE K. und KUDO Y., 1932: Flora of Hokkaido and Saghalien II. Hokkaido Imp. Univ., Sapporo.
- MIYATA H., 1970: Endogenous light-on rhythm in respiration of a long-day duckweed, *Lemna gibba* G3. Plant Cell Physiol. 11, 293-301.
- 1971: Endogenous light-on rhythm in respiration of a long-day duckweed, *Lemna gibba* G3. II. Basic and rhythmic components of the rhythm. Plant Cell Physiol. 12, 517-524.
 - 1971: Endogenous light-on rhythm in respiration of a long-day duckweed, *Lemna gibba* G3. III. Relationship to frond production. Plant Cell Physiol. 12, 969-977.
 - und YAMAMOTO Y., 1969: Rhythm in respiratory metabolism of *Lemna gibba* G3 under continuous illumination. Plant Cell Physiol. 10, 875-889.
- MIYAWAKI A. und TÜXEN J., 1960: Ueber Lemnetea-Gesellschaften in Europa und Japan. Mitt. Florist.-Soz. Arb.gem. Stolzenau/Weser 8, 127-135.
- MOCKERIDGE F.A., 1920: The occurrence and nature of the plant growth producing substances in various organic material composts. Biochem J. 14, 432-450.
- 1924: The formation of plant growth promoting substances by microorganisms. Ann. Bot. 38, 23-34.
- MONÉGER R., 1968: Contribution à l'étude de l'influence exercée par la lumière sur la biosynthèse des caroténoides chez la *Spirodela polyrrhiza* (L.) Schleiden. Physiol. Vég. 6, 165-202.
- MONOD T., 1949: Sur une Lemnacée africaine: *Wolffiella Welwitschii* (Hegelmaier 1865) comb. nov. Travaux botaniques dédiés à René Maire, Alger. 229-242.
- MOORE L.B. und EDGAR E., 1970: Flora of New Zealand 2, 53-55. Shearer, Wellington N.Z.
- MORET L., 1943: Manuel de paléontologie végétale. Masson et Cie., Paris.
- MORI H., 1979a: Kinetics of induction and production of flowers in a short-day duckweed, *Lemna paucicostata* 6746, in darkness. Plant Cell Physiol. 20, 615-622.
- 1979b: Effect of red light pulse on induction and production of flowers in a short-day duckweed, *Lemna paucicostata* 6746, in darkness. Plant Cell Physiol. 20, 623-630.
 - 1979c: Effect of temperature on induction and production of flowers in *Lemna paucicostata* 6746 in uninterrupted and interrupted darkness. Plant Cell Physiol. 20, 631-638.

- 1979d: Effect of far-red light pulse on induction and production of flowers in *Lemna paucicostata* 6746 in darkness. *Plant Cell Physiol.* 20, 639-648.
- MORRIS P.F. und BARKER W.G., 1977: Oxygen transport rates through mats of *Lemna minor* and *Wolffia* sp. and oxygen tension within and below the mat. *Can. J. Bot.* 55, 1926-1932.
- MORVAN C., DEMARTY M., MONNIER A., MUQBIL R. und THELLIER M., 1980: Titration of isolated cell walls of *Lemna minor*. *Dev. Plant Biol.* 4, 423-424.
- und THELLIER M., 1979: Titration of isolated cell walls of *Lemna minor* L. *Plant Physiol.* 63, 1117-1122.
- MOSS E.A., 1959: *Flora of Alberta*. Univ. Toronto Press. 546 S.
- MOUTERDE P., 1966: *Nouvelle Flore du Liban et de la Syrie*. Bd. 1. Beyrouth. 194-196.
- MOYLE J.B. und HOTCHKINS N., 1945: The aquatic and marsh vegetation of Minnesota and its value to waterfowl. Minn. Dept. of Conserv., Div. of Game and Fish Tech. Bull. 3, 1-22.
- MUIR D.C.G., GRIFT N.P., BLOUW A.P. und LOCKHART W.L., 1980: Persistence of fluridone in small ponds. *J. Environ. Qual.* 9, 151-156.
- MULLENDERS W. (et al.), 1967: *Flore de la Belgique, du Nord de la France et des Régions voisines*. Desoer, Liège. 505-506.
- MÜLLER P., 1975: Der Einfluss verschiedener CO₂-Konzentrationen auf das Wachstum und den Gehalt einiger Produkte des photosyntheseabhängigen Stoffwechsels von *Lemna minor* L. bei Nitrat- und Ammoniumernährung. Lizentiatsarbeit Bern.
- FELLER U. und ERISMANN H., 1977: Einfluss verschiedener CO₂-Konzentrationen auf Wachstum und stoffliche Zusammensetzung von *Lemna minor* L. bei Nitrat- und Ammoniumernährung. *Zeitschr. Pflanzenphys.* 85, 233-241.
- MÜLLER T., 1977: *Lemnetea*. In: OBERDORFER E. (Ed.), *Süddeutsche Pflanzengesellschaften* 1, 67-77. Stuttgart-New York.
- und GÖRS S., 1960: Pflanzengesellschaften stehender Gewässer in Baden-Württemberg. *Beitr. Naturk. Forsch. SW-Deutschl.*, Karlsruhe, 19, 60-100.
- MÜLLER Z. und LAUTNER V., 1954: (Die Futterwerte einiger unserer Wasserpflanzen. II.) tschech. *Sbosnik Cesk. Akad. Zemedl. Ved.* 27A, 451-472.
- MUROMTSEV G.S., ZOL'NIKOVA N.V. und BOROVKOV A.V., 1977: (Duckweed as a test-object for the evaluation of phytotoxic activity of soil microorganisms) russ. *S-Kh. Biol.* 12, 227-230.
- MUZAFANON A.M. et al., 1968: (The use of common duckweed for feeding domestic birds) russ. *Uzbekskii Biologicheskii Zourn. (USSR)* 12, 42ff.
- MUZTAR A., SLINGER S.J. und BURTON J.H., 1979: Chemical composition of aquatic macrophytes. IV. Carotenoids, soluble sugars and starch in relation to their pigmenting, and ensiling potential. *Can. J. Plant Sci.* 59, 1093-1098.
- MYERS R.W., 1977: A comparative study of nutrient composition and growth of selected duckweeds, *Lemnaceae*, on dairy waste lagoons. Master's thesis, Louisiana State Univ., Baton Rouge.
- NAKASHIMA H., 1964: Effects of exogenous amino acids on the flower and frond production in duckweed, *Lemna gibba* G3. *Plant Cell Physiol.* 5, 217-225.
- 1965: Further studies on the action of free amino acids on flowering of duckweed, *Lemna gibba* G3. *Plant Cell Physiol.* 6, 441-452.
- 1973: Reversal of the dark inhibition of flowering in a long-day duckweed, *Lemna gibba* G3, by thymidine and related nucleosides. *Plant*

- Cell Physiol. 14, 893-899.
- 1973a: Effect of light on the metabolism of thymidine in the long-day duckweed, *Lemna gibba* G₃. Plant Cell Physiol. 14, 901-910.
- 1975: Diurnal change of light dependent uridine incorporation into RNA in a long-day duckweed, *Lemna gibba* G₃. Plant Cell Physiol. 16, 27-40.
- 1976: Diurnal rhythm of uridine incorporation into RNA regulated by two light-perceiving systems in a long-day duckweed, *Lemna gibba* G₃. Plant Cell Physiol. 17, 209-217.
- 1979a: Diurnal rhythm of nuclear RNA polymerase I activity in a duckweed, *Lemna gibba* G₃, under continuous light conditions. Plant Cell Physiol. 20, 165-176.
- 1979b: Effects of incubation of nuclei from a long-day duckweed, *Lemna gibba* G₃, under different ionic conditions on the activity of RNA synthesis. Plant Cell Physiol. 20, 715-724.
- und MORI H., 1970: DNA synthesis as related to the reappearance of "light interruption rhythm" in a long-day duckweed, *Lemna gibba* G₃. Plant Cell Physiol. 11, 805-816.
- und TSUDZUKI T., 1976: Uptake of uridine by a long-day duckweed, *Lemna gibba* G₃. Plant Cell Physiol. 17, 701-711.
- 1977: The effects of calcium withdrawal on the uridine uptake process in a long-day duckweed, *Lemna gibba* G₃. Zeitschr. Pflanzenphys. 84, 399-406.
- NAUMANN H., 1964 und 1965: Kleintierleben im Wasserlinsenteppich. I. und II. Aqu. Terr. Z. 17, 377-379; 18, 346-348.
- NEDELCU G.A., 1973: Soziologische und ökologische Studien über Wasser- und Sumpfpflanzen einiger Wasserbecken in der rumänischen Ebene. Diss. Bot. 21, 220 S.
- NEGIBI M., SHIRIHAI E.D., BITHAN N. und PORATH D., 1972: Ethylene induced separation of daughter plants in *Spirodela polyrrhiza*. Isr. J. Bot. 21, 108-111.
- NELLES S. und PARTHIER B., 1969: Protein synthesis in sterile chloroplasts from *Lemna minor* L.: A contribution to the role of bacterial contamination. Exp. Cell Res. 58, 225-233.
- NEWTON R.J., 1974a: Abscisic acid effects on growth and metabolism in the roots of *Lemna minor*. Physiol. Plant. 30, 108-112.
- 1974b: Dual pattern of DL-leucine absorption by duckweed root tips. Plant Cell Physiol. 15, 249-254.
- 1977: Abscisic acid effects on fronds and roots of *Lemna minor* L. Am. J. Bot. 64, 45-49.
- und DUFFEY J., 1975: Turion induction in *Spirodela polyrrhiza*. Plant Physiol. 56, Suppl., 85.
- NICKELL L.G., 1955: Effects of antigrowth substances in normal and atypical plant growth. In: Antimetabolites and Cancer (Symp. Am. Ass. Adv. Sci.).
- 1956: Aseptic studies on metabolism of nitrogenous compounds in plants. Bull. Torr. Bot. Club 83, 421-427.
- 1962: Some simple substituted pyrimidines and their effect on the growth of *Lemna minor*. Phyton 18, 59-63.
- und FINLAY A.C., 1954: Antibiotics and their effects on plant growth. Agr. Food Chem. 2, 178-182.

- NIEMEYER R., 1975: Poly- und Metaphosphate in höheren Pflanzen (*Lemnaceae*). *Planta* 122, 303-305.
- NIKITIN V.V. und SEIFULIN E.M., 1976: New species for the flora of the Turkmen SSR. *Izv. Akad. Nauk. Turkmen SSR, Ser. Biol. Nauk.* 5, 89-90.
- NISHIUCHI K., 1975: (Effects of herbicides on *Lemna paucicostata*) jap. *Noyaku Tsushin* 93, 38-39.
- NISHIUCHI Y., 1974: (Control effect of a pesticide to duckweeds) jap. *Noyaku Kensasho Hokoku* 14, 69-72.
- NOIRFALISE A. und DETHIOUX M., 1977: Synopsis des végétations aquatiques d'eau douce en Belgique. *Comm. Centre Ecol. For. Rur. N.S.* 14, 1-25.
- NOVACKY A., FISCHER E., ULLRICH-EBERIUS C.I., LUETTGE U. und ULLRICH W.R., 1978: Membrane potential changes during transport of glycine as a neutral amino acid and nitrate in *Lemna gibba* G1. *FEBS Lett.* 88, 264-267.
- ULLRICH-EBERIUS C.I. und LUETTGE U., 1978: Membrane potential changes during transport of hexoses in *Lemna gibba* G1. *Planta* 138, 263-270.
- NYBERGH T., 1933: Ny lokal för *Lemna gibba*. *Mem. Soc. Faun. Flor. Fenn.* 8, 196-197.
- OBERDORFER E., 1970: Pflanzensoziologische Exkursionsflora für Süddeutschland. 3. Aufl. Stuttgart.
- OBERMEYER-MAUVE A., 1966: A note on two rarely seen minute flowering plants, *Wolfiella denticulata* and *W. Welwitschii* (*Lemnaceae*). *South Afr. J. Sci.* 62, 277-278.
- O'BRIEN M.C. und PRENDEVILLE G.N., 1978: A rapid sensitive bioassay for determination of paraquat and diquat in water. *Weed Res.* 18, 301-304.
- 1979: Effects of herbicides on cell membrane permeability in *Lemna minor*. *Weed Res.* 19, 331-334.
- ODA Y., 1962: Effect of light quality on flowering of *Lemna perpusilla* 6746. *Plant Cell Physiol.* 3, 415- 417.
- OGUNYEMI E.O., PITTMER F. und HOFFMANN-OSTENHOF O., 1978: Studies on the bio-synthesis of cyclitols. XXXVI. Purification of myo-inositol-1-phosphate synthase of the duckweed, *Lemna gibba*, to homogeneity by affinity chromatography on NAD sepharose: Molecular and catalytic properties of the enzyme. *Hoppe-Seyler's Z. Physiol. Chem.* 359, 613-616.
- OHTA Y. und TACHIBANA Y., 1978: (Effect of oxalate on the growth of *Lemna* and metabolic utilization of oxalate by *Lemna*) jap. *Nippon Dojo-Hiryogaku Zasshi.* 49, 16-20.
- OHTANI T. und ISHIGURI Y., 1979: Inhibitory action of blue and far-red light in the flowering of *Lemna paucicostata* T-101. *Physiol. Plant.* 47, 255-259.
- OHWI J., 1965: Flora of Japan. Smithsonian Inst., Washington D.C., 264-265.
- OLACZEK R., 1959: Nowe stanowisko *Wolffia arrhiza* (L.) Wimm. na Mazowszu. *Zesz. Nauk. Ul. Ser. 2, 5*, 89-90.
- und KRZYWAŃSKI D., 1970: *Wolffia arrhiza* i *Wolffietum arrhizae* w Polsce. *Zesz. Nauk. Ul. Ser. 2, 36*, 39-51.
- OLSEN C., 1930: On the influence of humus substances on the growth of green plants in water culture. *C. R. Trav. Lab. Carlsberg* 18, 1-16.
- 1950: Aquatic plants and hydrospheric factors. I. Aquatic plants in SW-Jutland. II. The hydrospheric types. *Svensk Bot. Tidskr.* 44, 1-34 und 332-374.
- ONO H., 1952: The effect of growth substances and some physiological factors of roots of lemnaceous plants. *Sieboldia* (Fukuoka) 1, 39-50.

- OOTA Y., 1965: Effects of growth substances on frond and flower production in *Lemna gibba* G₃. *Plant Cell Physiol.* 6, 547-559.
- 1966: Light and dark growth in long day duckweed *Lemna gibba* G₃ as affected by kinetin. *Plant Cell Physiol.* 7, 631-641.
 - 1970: Periodical growth response of *Lemna gibba* G₃ to light-break. *Plant Cell Physiol.* 11, 417-425.
 - 1971: Disappearance of rhythmicity in growth response to dark- and light-breaks in *Lemna gibba* G₃ due to iron deficiency. *Plant Cell Physiol.* 12, 255-266.
 - 1972a: A possible mechanism for sugar inhibition of duckweed flowering. *Plant Cell Physiol.* 13, 195-199.
 - 1972b: The response of *Lemna gibba* G₃ to a single long day in the presence of EDTA. *Plant Cell Physiol.* 13, 575-580.
 - 1973: The length of the induction period vs. the minimum number of long-day cycles needed for floral induction in *Lemna gibba* G₃. *Plant Cell Physiol.* 14, 307-317.
 - 1974: Removal of the sugar inhibition of flowering in *Lemna gibba* G₃ by catechol amines. *Plant Cell Physiol.* 15, 63-68.
 - 1975a: Photoperiodic requirements for flowering of the long-day duckweed, *Lemna gibba* G₃. *Plant Cell Physiol.* 16, 885-894.
 - 1975b: Short-day flowering of *Lemna gibba* G₃ induced by salicylic acid. *Plant Cell Physiol.* 16, 1131-1135.
 - 1977a: Removal by chemicals of photoperiodic light requirements of *Lemna gibba* G₃. *Plant Cell Physiol.* 18, 95-105.
 - 1977b: Replacement by ionophors of the photoperiodic light requirement in *Lemna gibba* G₃. *Plant Cell Physiol.* 18, 1363-1368.
 - und HOSHINO T., 1974: Diurnal change in temperature sensitivity of *Lemna gibba* G₃ induced by acetylcholine in continuous light. *Plant Cell Physiol.* 15, 1063-1072.
 - 1979: Spectral dependence of the critical photoperiod in the long-day duckweed *Lemna gibba* G₃. *Plant Cell Physiol.* 20, 1531-1536.
 - und KONDO T., 1974: Removal by cyclic AMP of the inhibition of duckweed flowering due to ammonium and water treatment. *Plant Cell Physiol.* 15, 403-411.
 - und TSUDZUKI T., 1971: Resemblance of growth substances to metal chelators with respect to their actions on duckweed growth. *Plant Cell Physiol.* 12, 619-631.
 - 1979: Evidence against involvement of circadian floral rhythm in the critical daylength measurement in *Lemna gibba* G₃. *Plant Cell Physiol.* 20, 725-732.
- OREBAMJO T.O., und STEWART G.R., 1974: Some characteristics of nitrate reductase induction in *Lemna minor*. *Planta* 117, 1-10.
- 1975a: Ammonium repression of nitrate reductase formation in *Lemna minor* L. *Planta* 122, 27-36.
 - 1975b: Ammonium inactivation of nitrate reductase in *Lemna minor* L. *Planta* 122, 37-44.
- OSTROW-SCHWEBEL J., 1979: An abscisic acid-induced separation layer in *Lemna minor*. *Fla. Sci.* 42, 172-176.
- VAN OVERBECK J., LOEFFLER J.E. und MASON M.I.R., 1968: Mode of action of abscisic acid. In: WIGHTMAN F. und SETTERFIELD G., Biochemistry and physiology of plant growth substances. Ottawa, Runge Press Ltd., 1593-1607.

- und MASON M.I.R., 1968: Dormin and cytokinin: growth regulation of *Lemna*. *Acta Bot. Neerl.* 17, 441-444.
- LE PABIC C., 1980: (Composition of polar lipids and analysis of fatty acids from foliage of *Spirodela* treated with 6-benzyl-aminopurine) frz. *Plant Sci. Lett.* 17, 303-310.
- PAMPANINI R. und PROVASI T., 1921: La fioritura della *Lemna minor* L. nell' Orto Botanico di Firenze. *Bull. Soc. Bot. Ital.* 1921, 53.
- PAN S.-M. und CHEN S.S.C., 1976: Scanning electron microscopy of chloroplasts from duckweed cells. *Taiwania* 21, 248-250.
- PAN Y.-T. und KINDEL P.K., 1977: Characterization of particulate D-apiosyl- and D-xylosyltransferase from *Lemna minor*. *Arch. Biochem. Biophys.* 183, 131-138.
- PANKNIN W., 1945: Zur Oekologie und Soziologie der *Lemna*-Standorte. *Arch. Hydrobiol.* 41, 225-232.
- PASSARGE H., 1957: Ueber Wasserpflanzen- und Kleinröhrichtgesellschaften des Oberspreewaldes. *Abh. Ber. Naturkd. Mus. Görlitz, Leipzig*, 35, 143-152.
- 1978: Zur Syntaxonomie mitteleuropäischer *Lemnetea*-Gesellschaften. *Folia Geobot. Phytotax.* 13, 1-17.
- PAUTOVA V.N. und GALIMULIN , 1980: (New findings of the rare higher aquatic plants in the East Siberia) russ. *Bot. Journ. (USSR)* 65, 1020-1022.
- PERLMAN D. und SEMAR J.B., 1967: Inhibition by purines of the production of fronds in *Lemna perpusilla*. *Nature* 215, 760-761.
- PERRING F.H. und WALTERS S.M., 1962: *Atlas of the British Flora*. Th. Nelson, London and Edinburgh, 343-344.
- PERRY T.O., 1963: Differences in protein constituents in dormant and vegetative plant tissue (*Spirodela polyrrhiza* and *Pinus thunbergii*). *AIBS Bull.* 13 (5), 73-75.
- 1968: Dormancy, turion formation and germination by different clones of *Spirodela polyrrhiza*. *Plant Physiol.* 43, 1866-1869.
- und BYRNE O.R., 1969: Turion induction in *Spirodela polyrrhiza* by abscisic acid. *Plant Physiol.* 44, 784-785.
- PETKOVA L.M. und LUBJANOV I.P., 1969: (Concentration of some microelements in macrophytes in the basins of the steppe zones of the Ukraine) ukr. Ukr. Bot. Zurn. Kijev 26, 90-96.
- PHILIPPI G., 1969: Laichkraut- und Wasserlinsengesellschaften des Oberrhein- gebietes zwischen Strassburg und Mannheim. *Veröff. Landesst. Natursch. Landsch.pfl. Baden-Württemberg* 37, 102-172.
- 1971: Beiträge zur Flora der nordbadischen Rheinebene und der angrenzenden Gebiete. *Beitr. Naturk. Forsch. Südw. Dtl.* 30, 9-47.
- 1978: Veränderungen der Wasser- und Uferflora im Badischen Oberrhein- gebiet. *Beitr. Veröff. Natursch. Landsch.pfl. Baden-Württemberg* 11, 99-134.
- PHILIPPI R.A., 1857: *Plantarum novarum Chilensis, centuria quarta*. *Linnaea* 29, 1-47.
- 1864: *Plantarum novarum Chilensis*. *Linnaea* 33, 239.
- PIETERSE A.H., 1972: Studies on flowering and turion formation in *Lemnaceae*. Thesis Univ. of Kentucky, Lexington, 124 S.
- 1974a: On the morphology of *Lemna minor* in South Finland. *Ann. Bot. Fenn.* 11, 271-274.
- 1974b: Gibberellin-EDDHA (ethylenediamine-di-o-hydroxyphenylacetic acid) interaction in flowering and gibbosity of *Lemna gibba* G3. *Plant Cell Physiol.* 15, 1125-1127.

- 1975a: Physiological, morphological, and anatomical aspects of gibbosity in *Lemna gibba*. *Aquat. Bot.* 1, 333-344.
- 1975b: Induction of flowering in *Lemna gibba* G₃ under short-day conditions by a combined treatment of EDDHA and BA. *Proc. XII. Int. Bot. Congress*, Leningrad, 308.
- 1976: Specific interactions in the physiology of flowering and gibbosity of *Lemna gibba* G₃. *Plant Cell Physiol.* 17, 713-720.
- 1977: Control of tropical aquatic weeds. *Bull. Dept. Agric. Res. Roy. Trop. Inst.* 300, 20 S.
- 1978a: Interaction of naphtol with EDDHA/salicylic acid in flowering and gibbosity of *Lemna gibba* G₃. *Plant Cell Physiol.* 19, 1307-1310.
- 1978b: Experimental control of flowering in *Pistia stratiotes* L. *Plant Cell Physiol.* 19, 1091-1093.
- 1980: Specific interactions in the physiology of flowering in *Lemna gibba* G₃ and *Pistia stratiotes*. *Symp. Weed Sci. Soc. Toronto*, 13 S.
- BHALLA P.R. und SABHARWAL P.S., 1970a: Induction of flowering in *Lemna gibba* G₃ by Fe-EDDHA. *Plant Cell Physiol.* 11, 675-676.
- 1970b: Investigations on the effects of metal ions and chelating agents on growth and flowering of *Lemna gibba* G₃. *Plant Cell Physiol.* 11, 879-889.
- 1970c: Control of gibbosity in *Lemna gibba* G₃ by ethylenediamine-di-o-hydroxyphenylacetic acid (EDDHA). *Acta Bot. Neerl.* 19, 521-524.
- 1970d: Chemical induction of turions in *Wolffiella floridana* (J.D. Smith) Thompson. *Acta Bot. Neerl.* 19, 901-905.
- 1971: Endogenous gibberellins in floating plants and turions of *Wolffiella floridana*. *Physiol. Plant.* 24, 512-516.
- und MÜLLER L.J., 1977: Induction of flowering in *Lemna gibba* G₃ under short-day conditions. *Plant Cell Physiol.* 18, 45-53.
- PIETSCH W., 1972: Ausgewählte Beispiele für Indikatoreigenschaften höherer Wasserpflanzen. *Arch. Natursch. u. Landschaftsforsch.* 12, 121-151.
- PIGNATTI S., 1957: La vegetazione delle risaie pavesi (studio fitosociologico). *Arch. Bot. Biogeogr. Ital.* 33, 4a Ser., 2, 1-68.
- PIP E., 1979: Survey of the ecology of submerged aquatic macrophytes in central Canada. *Aquat. Bot.* 7, 339-357.
- PIRSON A. und GÖLLNER E., 1953: Zellphysiologische Untersuchungen an der *Lemna*-Wurzel bei verminderter Nitrat- und Phosphatversorgung. *Zeitschr. Bot.* 41, 147-176.
- 1954: Beobachtungen zur Entwicklungsphysiologie der *Lemna minor* L. *Flora* 140, 485-498.
- und SCHAEFER G., 1957: Osmotischer Wasserentzug und Plasmolyse mit Polyaethylenoxyd. *Protoplasma* 48, 215-220.
- und SEIDEL F., 1950: Zell- und stoffwechselphysiologische Untersuchungen an der Wurzel von *Lemna minor* L. unter besonderer Berücksichtigung von Kalium- und Kalziummangel. *Planta* 38, 431-473
- PIZZOLATO T.D. und FRICK H., 1979: Pyrimidine metabolism in *Lemna minor*. II. Specific inhibition of plastid replication in a higher plant by cytidine deoxyriboside. *Plant Physiol.* 63, 979-983.
- VAN DER PLAS F., 1971: *Lemnaceae*. *Flora Malesiana Ser. I. Spermatophyta* 7, 219-237.
- POPPLUS B., 1901: *Lemna trisulca*. *Med. Soc. Fauna Flora Fenn.* 27, 45.
- PORATH D., 1979: Pathways of plastide differentiation in *Spirodela oligorrhiza*. *New Phytol.* 82, 733-737.

- HEPHER B. und KOTON A., 1979: Duckweed as an aquatic crop: Evaluation of clones for aquaculture. *Aquat. Bot.* 7, 273-278.
- POSNER H.B., 1962: Permanent and temporary effects of X-rays on the reproduction and aging of *Lemna perpusilla*. Ph. D. Thesis, Yale Univ.
- 1962: Characteristics of X-ray-induced aberrants of *Lemna perpusilla* 6746. *Plant Cell Physiol.* 3, 275-284.
- 1966: Some effects of copper and EDTA on flowering in *Lemna perpusilla*, aberrant strain 1073. *Proc. Annual Meetings, Am. Soc. Plant Physiol.* 29.
- 1967a: Aquatic vascular plants. In: WILT F. und WESSELS N. (Eds.), *Methods in Developmental Biology*. T.Y. Crowell Co., N.Y., 301-317.
- 1967b: Inhibitory effect of sucrose on flowering in *Lemna perpusilla* 6746 and mutant strain 1073. *Plant Cell Physiol.* 8, 535-539.
- 1969: Inhibitory effect of carbohydrate on flowering in *Lemna perpusilla*. I. Interaction of sucrose with calcium and phosphate ions. *Plant Physiol.* 44, 562-566.
- 1970: Inhibitory effect of carbohydrate on flowering in *Lemna perpusilla*. II. Reversal by glycine and L-aspartate: Correlation with reduced levels of β-carotene and chlorophyll. *Plant Physiol.* 45, 687-690.
- 1971: Inhibitory effect of carbohydrate on flowering in *Lemna perpusilla*. III. Effects of respiratory intermediates, amino acids, and CO₂-glucose 6-phosphate dehydrogenase activity. *Plant Physiol.* 48, 361-365.
- 1973a: Reversal of sucrose inhibition of *Lemna* flowering by adenine derivatives. *Plant Cell Physiol.* 14, 119-120.
- 1973b: Lack of flowering responses to DCMU [3-(3,4-dichlorophenyl)-1,1-dimethylurea] in a mutant of *Lemna perpusilla* 6746. *Plant Cell Physiol.* 14, 1031-1034.
- GRESSEL J. und ROSNER A., 1974: Direct evidence for the lack of methylation of two pulse labeled plant RNAs. *Plant Cell Physiol.* 15, 807-811.
- und HILLMAN W.S., 1960: Effects of X-irradiation on *Lemna perpusilla*. *Am. J. Bot.* 47, 506-511.
- 1962: Aseptic production, collection and germination of seeds of *Lemna perpusilla*. *Physiol. Plant.* 15, 700-708.
- POSNER R.S. und GOWER R.A., 1977: Effects of DCMU on long-day flowering of *Lemna perpusilla* 6746 and photosynthetic mutant strain 1073. *Plant Cell Physiol.* 18, 1301-1308.
- und ROSNER A., 1975: Effect of chloramphenicol on RNA synthesis in *Spirodela* chloroplasts. *Plant Cell Physiol.* 16, 361-365.
- POST G.E., 1933: Flora of Syria, Palestine and Sinai. American Press, Beiruth. 547-549.
- POTT R., 1980: Die Wasser- und Sumpfvegetation eutropher Gewässer in der westfälischen Bucht. Pflanzensoziologische und hydrochemische Untersuchungen. Abhandl. Landesmus. Naturk. Münster 42(2), 156 S.
- POURRIOT R., 1972: Etude hydrobiologique de deux petits étangs de prairie: Observations sur la distribution de la température et du plancton et l'influence d'un couvert végétal à *Lemna minor*. *Ann. Hydrobiol.* 3, 33-46.
- PRICE D.N. und WAIN R.L., 1976: Studies on plant growth-regulating substances. XLI. Structure-activity relationships and metabolism of a group of nitrophenols capable of inhibiting chloroplast development. *Ann. Appl. Biol.* 83, 115-124.

- PRINTZ H., 1921: The vegetation of the Siberian-Mongolian frontiers. Trondhejm. 175 S.
- PRYCE R.J., 1973: Allogibberic acid: An inhibitor of flowering in *Lemna perpusilla*. Phytochemistry 12, 1745-1754.
- 1974: Inhibition of flowering by hexahydrofluorene-9-carboxylic acids related to allogibberic acid. Phytochemistry 13, 2377-2382.
- PURVES W.K., 1961: Dark reactions in the flowering of *Lemna perpusilla* 6746. Planta 56, 684-690.
- RAGY H., PICKEN M. und MENDICINO J., 1973: Purification of a specific D-apitol dehydrogenase from a *Micrococcus* isolated from the surface of germinating parsley seeds. Biochim. Biophys. Acta 315, 259-271.
- RAKHIMOV A. und RAKHIMOVA S., 1975: (Study of the biochemical characteristics of small duckweed (content of carotene and ascorbic acid in a small duckweed culture biomass)) russ. Vodorosli i Griby Sredn. Azii 1975, 208-213.
- RAMAYYA N. und RAJAGOPAL T., 1975: *Pseudowolffia hyalina* (Del.) Hart. und Plas (Lemnaceae) - A new record for Asia from Hyderabad (India). Aquat. Bot. 1, 71-73.
- RAMIREZ C., ROMERO M. und RIVEROS M., 1979: Habit, habitat, origin and geographical distribution of Chilean vascular hydrophytes. Aquat. Bot. 7, 241-253.
- RAO C.B., 1953: On the distribution of algae in a group of six small ponds. J. Ecol. 41, 62-71.
- RAO K.V.N., RAO S.S.R., RAO K.N. und SRIMANNAARAYANA G., 1980: Effect of some proanthocyanidins and catechins on the growth of *Lemna paucicostata* Hegelm. Proc. Indian Acad. Sci. (Ser.), Plant Sci. 89, 73-77.
- REAY P.F., 1972: The accumulation of arsenic from arsenic-rich natural water by aquatic plants. J. Appl. Ecol. 9, 557-565.
- RECHINGER K.H., 1943: Flora Aegaea. Springer Verlag, Wien, 846.
- REID M.S. und BIELESKI R.L., 1970: Response of *Spirodela oligorrhiza* to phosphorus deficiency. Plant Physiol. 46, 609-613.
- REISFELD A., GRESSEL J., JAKOB K.M. und EDELMANN M., 1978: Characterization of the 32,000 dalton membrane protein. I. Early synthesis during photoinduced plastid development of *Spirodela*. Photochem. 27, 161-165.
- REJMÁNKOVÁ E., 1971: (The influence of temperature and irradiance on the growth and production of duckweeds (*Lemna gibba* L., *Lemna minor* L and *Spirodela polyrrhiza* (L.) Schleiden)) tschech. Thesis, Charles Univ., Praha.
- 1973: Seasonal changes in the growth rate of duckweed community (*Lemnetum gibbae*). Folia Geobot. Phytotax. 8, 1-13.
- 1974: Biology of duckweeds in a Pannonian fishpond. Symp. Biol. Hung. 15, 125-131.
- 1975a: The growth of *Lemna* ssp. under natural and seminatural conditions. Abstr. 12th Internat. Bot. Congress, Leningrad.
- 1975b: Comparision of *Lemna gibba* and *Lemna minor* from the production ecological viewpoint. Aquat. Bot. 1, 423-428.
- 1976: Germination of seeds of *Lemna gibba*. Folia Geobot. Phytotax. 11, 261-267.
- 1978: Growth, production and nutrient uptake of duckweeds in fishponds and in experimental cultures. In: DYKYJOVA D. und KWÉT E. (Ed.), Pond littoral ecosystems. Berlin. 278-292.

- REUTER L., 1948: Die Protoplasmistik der Schliesszellen von Schwimmmpflanzen.
I. Die Schliesszellen von *Lemna minor*. Phyton 7, 76-79.
- REZNIK H. und MENSCHICK R., 1969: Flavonoide in Sommergliedern und Winterknospen von *Spirodela polyrrhiza* (L.) Schleid. Zeitschr. Pflanzenphys. 61, 348-349.
- und NEUHÄUSEL R., 1959: Farblose Anthocyanine bei submersen Wasserpflanzen. Zeitschr. Bot. 47, 471-489.
- RHODES D., 1976: The regulation of ammonia assimilation in *Lemna minor* L. Ph. D. thesis, Univ. Manchester.
- RENDON G.A. und STEWART G.R., 1975: The control of glutamine synthetase level in *Lemna minor* L. Planta 125, 201-211.
- 1976: The regulation of ammonia assimilating enzymes in *Lemna minor*. Planta 129, 203-210.
- SIMS A.P. und STEWART G.R., 1979: Glutamine synthetase and the control of nitrogen assimilation in *Lemna minor*. Long Ahton Symp. (Proc.) 1977, 6, 501-520.
- RICHARD L.C., 1833a: Reliquiae Richardiana ad analysin botanicam spectantes Nayadeae. Arch. Bot. 1, 200-210.
- 1833b: Observations sur le genre *Lemna*. Arch. Bot. 1, 210-212.
- RIEDL H., 1976: Lemnaceae. In: RECHINGER K.H., Flora Iranica 119, 8 S.
- RIEMER D.N. und TOTH S.J., 1968: A survey of the chemical composition of aquatic plants in New Jersey. New Jersey Agric. Exp. Stat. Bull. 820, 14.
- RIMON D., 1964: Bud initiation in *Spirodela oligorrhiza*. Israel J. Bot. 13, 24-29.
- und GALUN E., 1968: Morphogenesis of *Spirodela oligorrhiza*: ontogenesis of fronds. Bot. Gaz. 129, 138-144.
- ROBERT R.M., CONNOR A.B. und CETORELLI J.J., 1971: The formation of glycoproteins in tissues of higher plants: Specific labelling with D-(1-¹⁴C) glucosamine. Biochem. J. 125, 999-1008.
- ROBERTS M.L., 1972: *Wolffia* in the bladders of *Utricularia*: an herbivorous plant? Mich. Bot. 11, 67-69.
- ROBERTS R.M. und LOEWUS F., 1968: Inositol metabolism in plants. VI. Conversion of myo-inositol to phytic acid in *Wolffiella floridana*. Plant Physiol. 43, 1710-1716.
- ROBERTSON-CUNNINGHAME R.C. und BLACKMAN G.E., 1952: Effects of preliminary treatment on the subsequent variation in the resistance of *Lemna minor* to the phytotoxic action of 2,4-dichlorophenoxyacetic acid. Nature 170, 459.
- ROBINETTE R., 1980: Use of duckweeds in catfish diets. Dept. of Wildlife Management, Miss. State Univ., State College, MS.
- RODGERS J.H. Jr., CHERRY D.S. und GUTHRIE R.K., 1978: Cycling of elements in duckweed (*Lemna perpusilla*) in an ash settling basin and swamp drainage system. Water Res. 12, 765-770.
- ROMBACH J., 1961: Growth of *Lemna minor* as influenced by light and kinetin. In: CHRISTENSEN B.C. und BUCHMANN B. (Eds.), Progress in Photobiology, 379-380. Elsevier, Amsterdam.
- 1965: The influence of the phytochrome reaction on the growth of *Lemna minor* L. Meded. Landbouwhogeschool Wageningen 65 (14), 1-11.
- 1966: The phytochrome reaction in *Lemna minor* L. Photochem. Photobiol. 5, 383-384.

- 1971: On the interaction of kinetin and phytochrome in *Lemna minor* growing in the dark. *Acta Bot. Neerl.* 20, 636-645.
- 1974: Thiamine requirement and phytochrome in *Lemna minor* L. In: DE GREEF J.A. (Ed.), *Proc. Ann. Europ. Symp. Plant Morphogenesis*, Antwerpen, 83-85.
- 1976: Effects of light and phytochrome in heterotrophic growth of *Lemna minor* L. *Meded. Landbouwhogeschool Wageningen* 76 (1), 1-114.
- 1978: Phytochrome variation and reversion in *Lemna minor*, *L. gibba* G₃ and *L. paucicostata* 6746. *Photochem. Photobiol.* 27, 781-786.
- und SPRUIT C.J.P., 1968: On phytochrome in *Lemna minor* and other Lemnaceae. *Acta Bot. Neerl.* 17, 445-454.
- ROSENTHAL G.A., ANGEL M., SMITH O.E. und KUMAMOTO J., 1976: Additive and synergistic growth-inhibiting properties of the canaline-urea cycle amino acid. *Plant Physiol.* 57, 493-496.
- GULATI D.K. und SABHARWAL P.S., 1975: Studies on the growth effects of the canaline-urea cycle amino acids with *Lemna minor* L. *Plant Physiol.* 56, 420-424.
- 1976: Biological effects of the canaline-urea cycle amino acids on higher plants. II. Additive and synergistic growth-inhibiting properties of the canaline-urea cycle amino acids. *Plant Physiol.* 57, 493-496.
- ROSNER A., GRESSEL J. und JAKOB K.M., 1978: Discoordination of ribosomal RNA metabolism during metabolic shifts of *Spirodesla* plants. *Biochim. Biophys. Acta* 474, 386-397.
- JAKOB K.M., GRESSEL J. und SAGHER D., 1975: The early synthesis and possible function of a 0.5×10^6 Mr RNA after transfer of dark-grown *Spirodesla* plants to light. *Biochem. Biophys. Res. Commun.* 67, 383-391.
- PORATH D. und GRESSEL J., 1974: The distribution of plastid ribosomes and integrity of plastid ribosomal RNA during greening and maturation of *Spirodesla* fronds. *Plant Cell Physiol.* 15, 891-902.
- POSNER H.B. und GRESSEL J., 1973: Synthesis and processing of RNA in *Lemna*. Characterization by gel electrophoresis. *Plant Cell Physiol.* 14, 555-564.
- REISFELD A., JAKOB K.M., GRESSEL J. und EDELMAN M., 1977: Shifts in the RNA and protein metabolism of *Spirodesla*. In: BOGORAD I.L. und WEIL J. (Eds.), *Coll. Int. CNRS* 261, 561-568.
- ROSS J.H., LIM L.O. und KRIEGER R.I., 1979: Herbicidal potency of 1,1'-alkyl-4,4'-bipyridylum salts as a function of their physicochemical constants in duckweed. *Drug Chem. Toxicol.* 2, 193-205.
- ROSTOVTZEEVA Z.P., 1967: The organogenesis and the characteristic structural features of *Wolffia arrhiza* (L.) Wimm. during the vegetative period of life) russ. *Bot. Journ. (USSR)* 52, 1177-1184.
- ROSTOWZEW S.I., 1901: (Ueber das Blühen der Wasserlinsen bei Moskau) russ. *Ann. Inst. Agron. Moscou* 7, 63-70.
- 1905: (Zur Biologie und Morphologie der Wasserlinsen) russ. *Ann. Inst. Agron. Moscou* 11, 222-329.
- ROULET M.G., 1975: Wasserlinsen (*Lemna minor* L.) als Testpflanzen von Klärschlamm. *Schweiz. Landwirtsch. Forsch.* 14, 79-82.
- ROUY G., 1912: *Flore de France* 13, 283-287. Deyrolle, Paris.
- ROXBURGH W., 1832: *Flora Indica* 3, 565-566. Mission Press, Calcutta.
- ROY R.P. und DUTT B., 1967: Cytology of *Wolffia microscopica*. *Cytologia* 32, 270-272.

- RUSKIN F.R. und SHIPLEY D.W (Eds.), 1976: Making aquatic weeds useful: some perspectives for developing countries. National Academy of Sciences Washington. Report of an ad hoc Panel of the Advisory Committee on Technology Innovation. Board on Science and Technology for International Development. Commission on International Relations. 175 S. Appendix A: Duckweeds and their uses. 148-154.
- RUSOFF L.L., ACHACOSO A.S. und GHOLSON J.H., 1980: Nutritional studies with duckweeds. Polykopie, Baton Rouge. 2 S.
- BLAKENEY E.W. und CULLEY D.D., 1980: Duckweeds (*Lemnaceae* family) - a potential source of protein and amino acids. *J. Agric. Food Chem.* 28. 848-850.
- GANTT D.T., WILLIAMS D.M. und GHOLSON J.H., 1977: Duckweed - a potential feedstuff for cattle. *J. Dairy Sci.* 60, Suppl. I, 161.
- ZERINGUE S.P., ACHACOSO A.S. und CULLEY D.D., 1978: Feeding value of duckweed (an aquatic plant, family *Lemnaceae*) for ruminants. *J. Dairy Sci.* 61, Suppl. I., 186.
- SAEGER A., 1925: The growth of duckweeds in mineral nutrient solutions with and without organic extracts. *J. Gen. Physiol.* 7, 517-526.
- 1929: The flowering of the *Lemnaceae*. *Bull. Torr. Bot. Club* 56, 351-358.
- 1930: A method of obtaining pure cultures of *Spirodela polyrrhiza*. *Bull. Torr. Bot. Club* 57, 117-121.
- 1933a: Manganese and the growth of *Lemnaceae*. *Am. J. Bot.* 20, 234-245.
- 1933b: Gas injury to pure cultures of *Spirodela*. *Plant Physiol.* 8, 479-480.
- 1934: *Spirodela oligorrhiza* collected in Missouri. *Bull. Torr. Bot. Club* 61, 233-236.
- 1937: The concentration of copper in nutrient solutions for *Spirodela polyrrhiza*. *Am. J. Bot.* 24, 640-643.
- SAHAI R., ROY P.S. und KAUR G., 1977: A comparative study of the toxicity of synthetic detergents on two common duckweeds at Gorakhpur. *Indian J. Ecol.* 4, 242-245.
- und SINHA A.B., 1970: Contribution to the ecology of Indian aquatics. II. Studies on the growth rate of duckweeds (*Lemna minor* Linn. and *Spirodela polyrrhiza* (Linn.) Schleid.) under laboratory conditions. *Proc. Nat. Acad. Sci. India Sect. B Biol. Sci.* 39, 143-144.
- SAID Z.M., CULLEY D.D. Jr., STANDIFER L.C., EPPS E.A., MYERS R.W. und BONEY S.A., 1980: Effect of harvest rate waste loading, and stocking density on the yield of duckweeds. *Proc. World Maricul. Soc.* 10, 769-780.
- SAKS Y., ILAN I. und NEGBI M., 1975: Production and release of abscisic acid in cultures of *Spirodela polyrrhiza* and its possible role in the regulation of morphogenetic events. *Plant Physiol.* 56, Suppl., 85.
- NEGBI M. und ILAN I., 1980: Involvement of active abscisic acid in the regulation of onset of dormancy in *Spirodela polyrrhiza*. *Aust. J. Plant Physiol.* 7, 73-79.
- SAMUELSSON G., 1934: Die Verbreitung der höheren Wasserpflanzen in Nordeuropa (Fennoskandien und Dänemark). *Acta Phytogeogr. Suecica* 6, 211 S.
- SANDERMANN J., Jr. und GRISEBACH H., 1970: Biosynthesis of D-apiose. V. NAD⁺-dependent biosynthesis of UDP-apiose and UDP-xylose from UDP-D-glucuronic acid with an enzyme preparation from *Lemna minor* L. *Biochim. Biophys. Acta* 208, 173-180.

- SANKHLA N. und HUBER W., 1979: Effect of abscisic acid on enzyme induction in *Lemna minor* L. Zeitschr. Pflanzenphys. 91, 7-16.
- SARAEK S., 1977: The effect of pyridoxal phosphate on the activity of aldolase from *Lemna minor*. J. Sci. Fac. Chiangmai Univ. 4, 62-87.
- und DAVIES D.D., 1977a: The effect of pyridoxal phosphate on the activity of aldolase from *Lemna minor* L. Planta 137, 265-270.
- 1977b: The control of aldolase in *Lemna minor* L. in relation to nitrogen deficiency. Planta 137, 271-277.
- SARGENT J.A., 1957: Factors determining the pattern of vascular tissue in *Lemna minor* L. Ph. D. thesis, Univ. London.
- und WANGERMAN E., 1959: The effect of some growth regulators on the vascular system of *Lemna minor*. New Phytol. 58, 345-363.
- SATO T. und ODA Y., 1977: Significance of timing and number of short-day cycles for initiation and subsequent development of floral buds in *Lemna perpusilla* 6746. Plant Cell Physiol. 18, 1041-1046.
- 1978: Effect of culture conditions in development in continuous light of floral buds in *Lemna perpusilla* 6746. Plant Cell Physiol. 19, 537-544.
- SAVAGE S., 1945: A catalogue of the Linnaean Herbarium. London. 225 S.
- SAVULESCU T., 1972: Flora Rep. Soc. Rom. 12, 780-787. Acad. Rep. Soc. Rom.
- SCHAEFER G., 1954: Beziehungen zwischen Stoffwechsel und Plasmazustand in der Wurzel von *Lemna minor* L. Diss..Marburg.
- 1956: Ueber die Wirkung von Stoffwechselaktoren auf den Plasma-Wand-Kontakt in der Wurzel von *Lemna minor* L. Flora 143, 327-355.
- SCHÄRER M., 1974: Der Einfluss des Schwefeldioxids (SO_2) auf die Sulfataufnahme durch *Lemna minor* L. unter standardisierten Bedingungen. Lizentiatarbeit Bern.
- BRUNOLD C. und ERISMANN K.H., 1975: Hemmung der Sulfataufnahme durch *Lemna minor* L. durch SO_2 in subletalen Konzentrationen. Experientia 31, 1414-1415.
- SCHARFETTER E., ROTTENBURG T. und KANDELER R., 1978: Die Wirkung von EDDHA und Salicylsäure auf Blütenbildung und vegetative Entwicklung von *Spirodela punctata*. Zeitschr. Pflanzenphys. 87, 445-454.
- SCHEID H.W., EHMKE A und HARTMANN T., 1980: Plant-NAD-dependent glutamate dehydrogenase. Purification, molecular properties and metal ion activation of the enzymes from *Lemna minor* und *Pisum sativum*. Zeitschr. Naturforsch. Ges., Biosci. 35, 213-221.
- SCHEINER O., PITTLER F., BOLLMANN O. und KANDELER R., 1978: Die Wirkung von Stickstoffmangel und anderen Faktoren auf die Phytinsäurespeicherung in *Lemna gibba* G1. Zeitschr. Pflanzenphys. 88, 295-303.
- SCHENCK H., 1886: Vergleichende Anatomie der submersen Gewächse. Bibl. Bot. 1 (1).
- SCHER S. und AARONSON S., 1958: Nutritional factors in apochlorosis: comparative studies with algae and higher plants. The photochemical apparatus. Brookhaven Symp. in Biology 11, 343-347.
- SCHLEIDEN M.J., 1839: Prodromus Monographiae *Lemmacearum* oder Conspectus generum atque specierum. Linnaea 13, 385-392.
- 1844: Beiträge zur Botanik. Leipzig. 242 S.
- SCHNYDER J., ROTTENBERG M. und ERISMANN K.H., 1975: The synthesis of threonine and thiothreonine from o-phosphohomoserine by extracts prepared from higher plants. Biochem. Physiol. Pflanzen 167, 605-608.
- SCHOLZ G., 1962: Versuch mit Bor an Lemnaceen: Die Wirkung des Bors auf den Kohlenhydratgehalt von *Lemna minor* L. Kulturpflanze 10, 63-71.

- SCHRÖDER F., 1977: Die Mollusken der Pflanzengesellschaften in den Gewässern des Bremer Raumes. I. Gastropoden der Lemnetea im Bremer Blockland. Abh. Naturw. Verein Bremen 38, 423-430.
- SCHULZ B., 1962: Wasserlinsen. Die neue Brehm-Bücherei, Ziemsen Verlag, Wittenerberg. 95 S.
- SCHUSTER M., 1968: Die Bedeutung von Starklicht und Kupfer für die phytchromgesteuerte Morphogenese von *Lemna perpusilla*. Diss. Würzburg. 102 S.
- und KANDELER R., 1970: Die Bedeutung der Photosynthese für die Langtagblüte der Kurztagpflanze *Lemna perpusilla* 6746. Zeitschr. Pflanzenphys. 63, 308-315.
- SCHWABE-BRAUN A. und TÜXEN R., 1980: Zur Sysnystematik der Klasse Lemnetea minoris in Europa. Symposium Rinteln 1980, 14 S. (im Druck).
- 1981: *Lemnetea minoris*. Prodromus der europäischen Pflanzengesellschaften, Lief. 4, ca. 140 S. (im Druck).
- SCHWARCZ R., FRIED W., PITTLER F. und HOFFMANN-OSTENHOF O., 1974: Untersuchungen über die Biosynthese der Cyclite: 32. Anwendung der Affinitätschromatographie an NAD-Sepharose zum Nachweis und zur Reinigung von Myo-Inositol-Phosphat-Synthese in Erythrocyten von Hühnern und in *Lemna gibba*. Monatsh. Chem. 105, 445-451.
- SCHWEBEL J.O., 1973: Hormonal control of growth and development in *Lemna minor*, with special emphasis on the role of abscisic acid (ABA). Ph. D. thesis, College Station, Texas. Univ. Microfilms Int., Ann Arbor, Mich., Order No. 73-19, 682; 129 S. Diss. Abstr. Int. B 34, 1015.
- SCHWIER H., 1953: Wasserlinsendrift in der Weser. Natur und Heimat 1.
- SCHWOERBEL J. und TILLMANNS G.C., 1972: Ammonium-Adaptation bei submersen Phanerogamen in situ. Arch. Hydrobiol. Suppl. B 42, 139-141.
- SCOGGAN H.J., 1978: The Flora of Canada 2, 456-457. Nat. Mus. Canada.
- SCOTLAND M.B., 1934: The animals of the *Lemna* association. Ecology 15, 290-294.
- 1940: Review and summary of studies of insects associated with *Lemna minor*. J. New York Ent. Soc. 48, 319-333.
- SCULTHORPE C.D., 1967: The biology of aquatic vascular plants. E. Arnold Ltd., London. 610 S
- SEGAL S., 1966: Oecologie van hogere Waterplanten. Vakbl. Biol. 46, 138-149.
- SEMENIKHINA K.A., 1979: (New sites of rare aquatic species in water bodies of the Desna River flood plains, Russian SFSR, USSR) ukr. Ukr. Bot. Zh. 36, 214-218.
- SETH P.N., VENKATARAMAN R. und MAHESHWARI S.C., 1970: Studies on the growth and flowering of a short-day plant, *Wolffia microscopica*. II. Role of metal ions and chelates. Planta 90, 349-359.
- SETO M., TAKAHASI Y., USHIJIMA T. und TAZAKI T., 1979: Chlorotic death of *Lemna gibba* by cadmium in different concentrations of nutritional minerals. Jap. J. Limnol. 40, 61-65.
- SEYMOUR F., 1969: The Flora of New England. C.E. Tuttle Co., Rutland, Vermont. 169-170.
- SHAHAK Y., POSNER H.B. und AVRON M., 1976: Evidence for a block between plastoquinone and cytochrome f in a photosynthetic mutant of *Lemna* with abnormal flowering behavior. Plant Physiol. 57, 577-579.
- SHAMBHU M.B., DIGENIS G.A., GULATI D.K., BOWMAN K. und SABHARWAL P.S., 1976: Chemical combinations of 2,4-dichlorophenoxyacetic acid (2,4-D) and polystyrene: Preparation and application for the control of duckweed.

- J. Agric. Food Chem. 24, 666-668.
- SHEPARD D.V. und THURMAN D.A., 1973: Effect of nitrogen sources upon the activity of L-glutamate dehydrogenase of *Lemna gibba*. Phytochemistry 12, 1937-1946.
- SHIBATA O. und TAKIMOTO A., 1975: Flowering response of *Lemna perpusilla* 6746 to a single dark period. Plant Cell Physiol. 16, 513-520.
- SHIREMAN J.V., COLLE D.E. und ROTTMANN R.W., 1977: Intensive culture of grass carp *Ctenopharyngodon idella* in circular tanks. J. Fish. Biol. 11, 267-262.
- SHISHKIN B.K., 1964: *Lemnaceae*. In: KOMAROV L. (Ed.), Flora SSSR (englische Ausgabe), Jerusalem, 3, 389-391.
- SHREVE F. und WIGGINS I.L., 1964: Vegetation and Flora of the Sonora Desert, 1, 327-329. Stanford University Press, Stanford.
- SIEFERMANN D., 1972: Kinetic studies on the xanthophyll cycle of *Lemna gibba*. Influence of photosynthetic oxygen and supplied reductor. Proc. Int. Congr. Photosyn. Res. 2, 1971, 1, 629-635.
- SIELING D.H., 1937: The influence of the phosphate-calcium ratio and of humates on chlorosis in *Lemna*. Iowa State Coll. J. Sci. 12, 151-154.
- SILVEY W.D., 1967: Occurrence of selected minor elements in the waters of California. Geolog. Survey Water-supply 1535 L. U.S. Governm. Print. Off., Washington D.C., S. L 18-19.
- SIMON E.W. und BLACKMAN G.E., 1953: Studies in the principles of phytotoxicity. IV. The effects of the degree of nitration on the toxicity of phenol and other substituted benzenes. J. Exp. Bot. 4, 235-250.
- ROBERTS H.A. und BLACKMAN G.E., 1952: Studies on the principles of phytotoxicity. III. The pH factor and the toxicity of 3,5-dinitro-o-cresol, a weak acid. J. Exp. Bot. 3, 99-109.
- SIPKO L.L. und DIMITIEVA S.A., 1971: (Higher water vegetation and its fauna of Krotowaya Laga and Kuskan lakes (North Kulanda)) russ. Izv. Sib. Otd. Akad. Nauk. SSSR Ser. Biol. Med. Nauk. 3, 59-62.
- SKOOG F. und THIMANN K.V., 1940: Enzymatic liberation of auxin from plant tissues. Science 92, 64.
- DE SLOOVER J.-L., 1961: Note sur le pollen de *Lemna minor* L. Pollen et Spores 3, 5-10.
- 1964: Sur la floraison des Lemnacées. Nat. Mosana 17, 73-81.
- 1966: La fronde, la graine et la germination d'une *Lemna*. Nat. Belg. 47, 443-456.
- 1973: *Lemnaceae du Rwanda*. Bull. Jard. Bot. Nat. Belg. 43, 361-368.
- SMITH J.D., 1880: *Wolffia (Wolffiella) gladiata*, var. *Floridana*. Bull. Torr. Bot. Club 7, 64-65.
- SNELL K., 1907: Untersuchungen über die Nahrungsaufnahme der Wasserpflanzen. Flora 98, 213-249.
- SOLSKI A. WERNIKOWSKA-UKLEJA A. und MULTAN B., 1979: Toxicity of flotation reagents to aquatic organisms and their permissible concentration in surface waters. Cuprum 6, 32-35.
- SOUÈGES R., 1959: Embryogénie des Lemnacées. Développement de l'embryon chez le *Lemna minor* L. C. R. Acad. Sci. Paris 248, 1896-1900.
- SPOHR E., 1926: Ueber das Vorkommen von *Sium erectum* Huds. und *Lemna gibba* L. in Estland und über deren nordöstliche Verbreitungsgrenzen in Europa. Acta Horti Bot. Univ. Latviens. 1, 22 S.
- SPOONER W.E., 1967: Local variation in *Spirodela polyrhiza* (L.) Schleid. (*Lemnaceae*). Master's thesis. North Carolina State Univ., Raleigh. 32 S.

- VAN STADEN J. und BORNMANN C.H., 1969: Inhibition and promotion by abscisic acid of growth in *Spirodela*. *Planta* 85, 157-159.
- 1970: Cytokinin and gibberellin effects on abscisic acid induced inhibition of growth in *Spirodela*. *J. S. Afr. Bot.* 36, 207-213.
- STAFFORD H.A., 1964: Comparision of lignin-like products found naturally or induced in tissues of *Phleum*, *Elodea*, and *Coleus*, and in a paper peroxidase system. *Plant Physiol.* 39, 350-360.
- STANIEWSKA-ZATEK W., 1964: Nove stanowiska wolfii bezkorzeniowej (*Wolffia arrhiza* Wimmer) w dolinie Samy kolo Poznania. *Przyr. Polski Zach.* 8, 86-89.
- STANLEY R.A. und MADEWELL C.E., 1975: Optimum dilution of swine wastes for growth of *Lemna minor* and *Euglena* sp. In: *Managing Livestock wastes*, Am. Soc. Agric. Engineers, St. Joseph, Mi. 321-323.
- 1976a: Chemical tolerance of *Lemna minor*. *Tenn. Valley Authority, Muscle Shoals, Al.*, 17 S.
- 1976b: Thermal tolerance of *Lemna minor*. *Tenn. Valley Authority, Muscle Shoals, Al.*, 36 S.
- STATSENKO L.P., 1978: (Control of mosquito hatching using the herbicide simazine) russ. *Med. Parazitol. Parazit. Bolezni* 47, 93-95.
- STEEMANN NIELSEN E., 1944: Dependence of freshwater plants on quantity of carbon dioxide and hydrogen ion concentration. *Dansk Bot. Ark.* 11(8), 25 S.
- 1947: Photosynthesis of aquatic plants with special reference to the carbon sources. *Dansk Bot. Ark.* 12(8), 71 S.
- 1954: On the preference of some freshwater plants in Finland for brackish water. *Bot. Tidskr.* 51, 242-247.
- STEINBERG R.A., 1941: Use of *Lemna* for nutrient studies on green plants. *J. Agric. Res.* 62, 423-430.
- 1943: Use of *Lemna* as a test organism. *Chronica Botanica* 7, 420.
- 1946: Mineral requirements of *Lemna minor*. *Plant Physiol.* 21, 42-48.
- STELZ T., AYADI A., MONNIER A., DEMARTY M. und THELLIER M., 1975: (Fixation of calcium ions in the cellular free spaces of plants) frz. *C. R. Séanc. Soc. Biol.* 169, 1072-1076.
- und THELLIER M., 1971: Formulation électrocinétique de l'absorption du calcium par des végétaux calcioles et calcifuges. *C. R. Acad. Sci. Paris, D*, 272, 1101-1104.
- STEPHANOVA V.S., 1928: (Influence of *Lemna* covering on a water basin) russ. *Trav. Soc. Nat. Leningrad* 58, 63-82.
- 1932: Die Geschwindigkeit des vegetativen Wachstums der Gattung *Lemna*. *Bot. Journ. (USSR)* 17, 524-529.
- STEWART G.R., 1968: The effect of cycloheximide on the induction of nitrate and nitrite reductase in *Lemna minor* L. *Phytochemistry* 7, 1139-1142.
- 1969: Abscisic acid and morphogenesis in *Lemna polyrhiza* L. *Nature* 222, 61-62.
- 1972a: End-product repression of nitrate reductase in *Lemna minor*. *Symp. Biol. Hung.* 13, 127-135.
- 1972b: The regulation of nitrite reductase level in *Lemna minor* L. *J. Exp. Bot.* 23, 171-183.
- und RHODES D., 1976: Evidence for the assimilation of ammonia via the glutamine pathway in nitrate-grown *Lemna minor* L. *FEBS Lett.* 64, 296-299.
- 1977: A comparision of the characteristics of glutamine synthetase and glutamate dehydrogenase from *Lemna minor* L. *New Phytol.* 79, 257-268.

- und SIMS A.P., 1967: Adaptive response of the enzyme malic dehydrogenase from cells of *Lemna minor* grown on different levels of calcium ions. SERAVAC.
- und SMITH H., 1972: Effects of abscisic acid on nucleic acid synthesis and the induction of nitrate reductase in *Lemna polyrhiza*. J. Exp. Bot. 23, 875-885.
- STEWART R.R., 1972: Flora of West Pakistan. Fakhri Print. Press, Karachi, Pakistan. 36.
- STEYERMARK J., 1975: Flora of Missouri (4. Aufl.), 1, 386-391. The Iowa State Univ. Press, Ames.
- STOECKLI B., BRAENDLE R. und ERISMANN K.H., 1975: Mitoseaktivität und Zellzyklus unter Begasung mit subletalen SO₂-Konzentrationen bei der Wasserlinse (*Lemna minor* L.). Experientia 31, 795-796.
- STOIANOFF N. und STEFANOFF B., 1924: (Flore de la Bulgarie) bulg. Sofia. 204-206.
- STRANSBAUGH P.D. und CORE E.L., 1952: Flora of West Virginia 1. West Virginia Univ. Bull. 52, 208-209.
- STRASBURGER E., NOLL F., SCHENCK H. und SCHIMPER A.F.W., 1978: Lehrbuch der Botanik. 31. Aufl. G. Fischer, Stuttgart. 1178 S.
- STRASSER R.J., 1971: Eine einfache Anlage zur kontinuierlichen Kultivierung von Lemnaceen mit automatischer Probeentnahme. Photosynthetica 5, 76-78.
- STRAUSS R., 1973: Influence de la concentration en alcalino-terreux du milieu de culture sur la croissance et le métabolisme de *Lemna minor* L. C. R. Soc. Biol. 167, 827-830.
- 1976: Effet de divers sels alcalines sur la croissance et la nutrition minérale de *Lemna minor* L. Int. Rev. Gesamten Hydrobiol. 61, 673-676.
- STROTHER S., 1979: Hydrolysis of α-D-glucuronate-l-phosphate by extracts from *Lemna minor*. Phytochemistry 18, 486.
- SU K.L., STABA E.J. und ABUL-HAJI Y., 1973: Preliminary chemical studies of aquatic plants from Minnesota. Lloydia 36, 72-79.
- SU M.T. und ASHBY E., 1929: The interaction of factors in the growth of *Lemna*. II. Technique for the estimation of dry weight. Ann. Bot. 43, 329-332.
- SUNESON S., 1959: *Lemna gibba* i Bohnslän. Svensk. Bot. Tidskr. 53, 287-292.
- SUPNIEWSKA J.H., 1963: Observations on the action of trimethyl-β-chloorethyl-ammonium chloride on plants. I. *Lemna minor* L., *Chlorella pyrenoidosa* Prings., *Riccia fluitans* L. Bull. Acad. Pol. Sci. Ser. Sci. Biol. 11, 149-154.
- SUTTON D.L. und ORNES W.H., 1975: Phosphorus removal from static sewage effluent using duckweed. J. Environ. Qual. 4, 367-370.
- 1977: Growth of *Spirodela polyrhiza* in static sewage effluent. Aquat. Bot. 3, 231-238.
- SWADER J.A., 1970: Nitrate uptake and reduction in *Wolffia arrhiza*. Ph. D. dissertation, Univ. Calif., Davis.
- und STOCKING C.R., 1971: Nitrate and nitrate reduction by *Wolffia arrhiza*. Plant Physiol. 47, 189-191.
- und LIN C.H., 1975: Light stimulated absorption of nitrate by *Wolffia arrhiza*. Plant Physiol. 54, 335-341.
- TÄCKHOLM V., 1974: Students' Flora of Egypt. Cairo Univ., Beirut. 768-769.
- TAKIMOTO A., 1973: Flower initiation of *Lemna perpusilla* under continuous low-intensity light. Plant Cell Physiol. 14, 1217-1219.

- und TANAKA O., 1973: Effects of some SH-inhibitors and EDTA on flowering in *Lemna perpusilla* 6746. *Plant Cell Physiol.* 14, 1133-1141.
- 1974: Effects of some sulphydryl inhibitors on floral initiation under various light conditions in *Lemna perpusilla*. In: *Plant Growth Substances*, 1973. Hirovaka Publ., Tokyo. 953-969.
- 1976: Long-day flowering of *Lemna perpusilla* 6746 in molybdenum-deficient medium. *Plant Cell Physiol.* 17, 299-303.
- TAN Y.T., 1970: Composition and nutritive value of some grasses, plants and aquatic weeds tested as diets. *J. Fish. Biol.* 2, 253-257.
- TANAKA O. und CLELAND C.F., 1980: Comparision of the ability of salicylic acid and ferricyanide to induce flowering in the long-day plant, *Lemna gibba* G₃. *Plant Physiol.* 65, 1058-1061.
- und HILLMAN W.S., 1979: Inhibition of flowering in the long-day plant *Lemna gibba* G₃ by Hutner's medium and its reversal by salicylic acid. *Plant Cell Physiol.* 20, 839-846.
- und TAKIMOTO A., 1975: Suppression of long-day flowering by nitrogenous compounds in *Lemna perpusilla* 6746. *Plant Cell Physiol.* 16, 603-610.
- 1977: Flower-promoting effect of some amino acids and amides in *Lemna paucicostata* 6746. *Plant Cell Physiol.* 18, 27-34.
- 1978: Effect of nitrate concentration in the medium on the flowering of *Lemna paucicostata* 6746. *Plant Cell Physiol.* 19, 701-704.
- und CLELAND C.F., 1979: Enhancement of long-day flowering by Mo-deficiency and application of some amino acids and asparagine in the short-day plant *Lemna paucicostata* 6746. *Plant Cell Physiol.* 20, 267-270.
- TASSERON-DE JONG J.G., 1968: Onderzoeken over cytokinines. Effecten van 6-benzylaminopurine op *Lemna minor* L. Thesis Leiden.
- und VELDSTRA J.H., 1971a: Investigations on cytokinins. I. Effect of 6-benzyl-amino-purine on growth and starch content of *Lemna minor*. *Physiol. Plant.* 24, 235-238.
- 1971b: Investigations on cytokinins. II. Interaction of light and cytokinins as studied in *Lemna minor*. *Physiol. Plant.* 24, 239-241.
- TATKOWSKA E. und KOBYLAŃSKA D., 1978: The effect of sodium humate on cultures of *Spirodela polyrrhiza* (L.) Schleiden under aseptic conditions. *Ekol. Pol.* 26, 213-220.
- und TOPOROWSKA E., 1978: The effects of detergents on cultures of *Spirodela polyrrhiza* (L.) Schleiden under aseptic conditions. *Ekol. Pol.* 26, 221-229.
- TEIXEIRA A.R.N. und DAVIES D.D., 1974: The control of plant glutamate dehydrogenase by pyridoxal-5'-phosphate. *Phytochemistry* 13, 2071-2080.
- THANIKAIMONI G., 1969: Esquisse palynologique des Aracées. *Trav. Sect. Sci. Tech. Inst. Fr. Pondichery* 5 (5), 31 S.
- THELLIER M. und LE GUIEL J., 1967: Etude, grâce à l'isotope stable ¹⁰B, de l'absorption du borate par la *Lemna minor* L. *C. R. Acad. Sci. Paris, D,* 264, 292-295.
- DUVAL Y. und DEMARTY M., 1979: Borate exchange of *Lemna minor* L. as studied with the help of the enriched stable isotopes and of a (n, α) nuclear reaction. *Plant Physiol.* 63, 283-288.
- THIMANN K.V. und EDMONDSON Y.H., 1949: The biogenesis of the anthocyanins. I. General nutritional conditions leading to anthocyanin formation. *Arch. Biochem. Biophys.* 22, 33-53.

- und RADNER B.S., 1951: The biogenesis of anthocyanins. III. The role of sugars in anthocyanin formation. Arch. Biochem. Biophys. 34, 305-323.
- und RADNER B.S., 1955a: The biogenesis of anthocyanins. IV. The inhibitory effect of methionine and other sulfur-containing compounds on anthocyanin formation. Arch. Biochem. Biophys. 58, 484-497.
- 1955b: The biogenesis of anthocyanins. V. Evidence for the mediation of pyrimidines in anthocyanin synthesis. Arch. Biochem. Biophys. 59, 511-525.
- 1958: The biogenesis of anthocyanins. VI. The role of riboflavin. Arch. Biochem. Biophys. 74, 209-223.
- und SKOOG F., 1940: The extraction of auxin from plant tissues. Am. J. Bot. 27, 951-960.
- und BYER A.C., 1942: The extraction of auxin from plant tissues II. Am. J. Bot. 29, 598-606.
- THOMPSON C.H., 1896: The ligulate *Wolffias* of the United States. Ann. Rep. Miss. Bot. Gard. 7, 101-111.
- 1898: A Revision of the American *Lemnaceae* occurring North of Mexico. Ann. Rep. Miss. Bot. Gard. 9, 21-42.
- TIKHONOV O.I., KRIVENCHUK P.E. und LITVINENKO V.I., 1965: (Flavonoids of the lesser duckweed (*Lemna minor*). I. Preliminary studies) ukr. Farm. Zh. (Kiev) 20, 63 ff.
- und KOVALÓV I.P., 1965: (Flavonoids of *Lemna minor* II.) ukr. Farm. Zh. (Kiev) 20, 53 ff.
- TILLBERG E. und ELIASSON L., 1976: Indoleacetic acid enhancement of the inhibition of *Lemna* growth caused by abscisic acid. Planta 130, 53-55.
- und ERICSSON T., 1980: Time course of uptake of ^{14}C -abscisic acid by *Lemna gibba* in relation to growth. Physiol. Plant. 48, 584-587.
- HOLMVALL M. und ERICSSON T., 1979: Growth cycles in *Lemna gibba* cultures and their effects on growth rate and ultrastructure. Physiol. Plant. 46, 5-12.
- TITOVA A.A., 1978: Accumulation of the herbicide 2,4-D by some higher aquatic plants. Gidrobiol. Zh. 14, 110-111.
- TOBIN E.M., 1978: Light regulation of specific mRNA species in *Lemna gibba* L. G3. Proc. Natl. Acad. Sci. USA 75, 4749-4753.
- und SUTTIE L., 1980: Light effects on the synthesis of ribulose-1,5-biphosphate carboxylase in *Lemna gibba* G3. Plant Physiol. 65, 641-647.
- TOMASZEWCZ H., 1977: (Aquatic and bog vegetation in the reservoirs of the Ciechornice and Skrwa drainage area on the Gostynin Lakeland) pol. Monogr. Bot. 52, 144 S.
- TOMIYAMA T., YONE Y. und ISHIO S., 1951: (Biochemical studies on the lignification of fish body. II. On the effectiveness of "solubilized fish" to the growth of a plant, *Lemna paucicostata* Hegelm.) jap. Sci. Bull. Fac. Agr. Kyushu Univ. 13, 306-312.
- TORREY J., 1843: A flora of the state of New York. 2, 245. Albany.
- TRELEASE W., 1882: On the structure which favor cross-fertilization in several plants. Proc. Boston Soc. Nat. Hist. 21, 410-440.
- TREWAVAS A., 1970: The turnover of nucleic acids in *Lemna minor*. Plant Physiol. 45, 742-751.
- 1972a: Determination of the rates of protein synthesis and degradation in *Lemna minor*. Plant Physiol. 49, 40-46.
- 1972b: Control of protein turnover rates in *Lemna minor*. Plant Physiol. 49, 47-51.

- 1973: Phosphorylation of ribosomal protein in *Lemna minor*. Plant Physiol. 51, 760-767.
- TRIVEDI B.S. und VERMA C.L., 1972: Spore and pollen assemblages of the Tertiary coal beds of Malaya. J. Palynol. 8, 27-36.
- TRUAX R.E., CULLEY D.D., GRIFFITH M., JOHNSON W.A. und WOOD J.P., 1972: Duckweed for chick feed? Louisiana Agriculture 16, 8-9.
- TSUDZUKI T. und KONDO T., 1979: Further studies on potassium rhythm in the long-day duckweed *Lemna gibba* G3 with special reference to vegetative growth. Plant Cell Physiol. 20, 1079-1086.
- TULGANOV A., 1972: (Amino acid composition of protein isolated from *Lemna minor* (common duckweed)) russ.; keine engl. Zsf. Dokl. Akad. Nauk Uzb., SSR 29, 56-57.
- TÜXEN R., 1971: *Lemnetea*. In: TÜXEN R., Bibliographia phytosociologica syn-taxonomica. Lief. 2. J. Cramer, Lehre.
- 1974: Die Pflanzengesellschaften Nordwestdeutschlands. 2. Aufl. *Lemnetea minoris* 35-83. J. Cramer, Lehre.
- ULLMANN I. und VÄTH R., 1978: Wasser- und Sumpfpflanzengesellschaften der verschiedenen Gewässertypen im Schweinfurter Raum (östliches Maindreieck). Ber. Bayer. Bot. Ges. 49, 137-163.
- ULLRICH W.R., 1979: Die Nitrataufnahme bei Grünalgen und ihre Regulation durch äußere Faktoren. Ber. Deutsch. Bot. Ges. 92, 273-284.
- ULLRICH-EBERIUS C.I., NOVACKY A. und LUETTGE U., 1978: Active hexose uptake in *Lemna gibba* G1. Planta 139, 149-154.
- 1980: Extracellular pH changes during glucose uptake in *Lemna gibba*. Dev. Plant Biol. 4, 551-552.
- UMEMOTO T., 1971: Effect of chlorogenic acid on flower production in long-day duckweed, *Lemna gibba* G3. Plant Cell Physiol. 12, 165-169.
- UMEMURA K., INOKUCHI H. und OOTA Y., 1963: Flowering in *Lemna gibba*. Plant Cell Physiol. 4, 289-292.
- und OOTA Y., 1965a: Effects of nucleic acid and protein-antimetabolites on frond and flower production in *Lemna gibba* G3. Plant Cell Physiol. 6, 73-86.
- 1965b: Flowering in *Lemna paucicostata* as compared with that in *Lemna perpusilla* 6746. Plant Cell Physiol. 6, 793-798.
- URBANSKA-WORYTKIEWICZ K., 1975: Cytological variation with *Lemna* L. Aquat. Bot. 1, 377-394.
- 1980: Cytological variation within the family of *Lemnaceae*. Veröff. Geobot. Inst. ETH, Stiftung Rübel, 70, 30-101.
- VAN DER VALK A.G. und DAVIS C.B., 1978: The role of seed banks in the vegetation dynamics of prairie glacial marshes. Ecology 59, 322-335.
- VARENKO N.I. und LUBJANOV I.P., 1973: (On accumulation of trace elements by some hydrophytes of the Dneprodzeržinsk and Zapozhožje reservoirs) ukr. Ukrain. Bot. Zurnal, Kijev 30, 165-170.
- VAVRUSKA A., 1966: Stanovení živin v nejrozšírenějších vodních, pobřežních a bažinných rostlinach z hlediska využití ke kompostování (engl. summary). Prace Vyzk. Ust. Ryb. Hydrobiol. 6, 41-68.
- VEEN J., 1975: Preliminary studies of the flavonoid pattern of *Lemna gibba* L. and *Lemna minor* L. Aquat. Bot. 1, 417-421.
- VELENovsky J., 1907: Vergleichende Morphologie der Pflanzen 2, 340. Prag.
- VENKATARAMAN R., SETH P.N. und MAHESHWARI S.C., 1970: Studies on the growth and flowering of a short-day plant, *Wolffia microscopica*. I. General aspects and introduction of flowering by cytokinins. Zeitschr. Pflanzenphysiol. 62, 316-327.

- VERMEERSCH J., 1976: Mise au point d'une méthode de microanalyse des nucléotides pyridiniques dans les cellules de Spirodèle et de blé. Application à l'étude des effets du saccharose et de l'obscurité. D.E.S. Univ. P.-M.-Curie, Paris.
- VERNADSKY W. und VINOGRADOFF A., 1931: Sur la composition chimique des *Lemna* comme caractéristique des espèces. C. R. Acad. Sci. Paris, 193, 560-561.
- VESTER H., 1940: Die Areale und Arealtypen der Angiospermen-Familien. 2. Teil. Bot. Arch. 41, 295-356.
- VINTEJOUX C., 1958: Recherches sur la racine de *Lemna minor* L. (Lemmacées). Ann. Sci. Nat. Bot. 19, 213-261.
- VOGEL H.J., 1959: On biochemical evolution: lysine formation in higher plants. Proc. Nat. Acad. Sci. 45, 1717-1721.
- UYCK L., 1895a: Over het bloeien van *Lemna*. Bot. Jaarboek 7, 60-72.
- 1895b: Sur la floraison de quelques espèces de *Lemna*. Nederlandsch Kruidkundig Archief 2/6, 755-756.
- WALKER E.H., 1976: Flora of Okinawa and the southern Ryukyu Islands. Smithsonian Inst. Press, Washington. 290-291.
- WALLACE J.W. und MARBY T.J., 1970: The conversion of the 8-C-glycosylflavone vitexin in *Lemna minor*. Phytochemistry 9, 2133-2135.
- WALSH M.A. und MELARAGNO J.E., 1976: Ultrastructural features of developing sieve elements in *Lemna minor* L.: Sieve plate and lateral sieve areas. Am. J. Bot. 63, 1174-1183.
- WALTER H., HARNICKEL E. und MUELLER-DOMBOIS O., 1975: Klimadiagramm-Karten der einzelnen Kontinente und die ökologische Klimagliederung der Erde. Vegetationsmonograph. d. einzelnen Grossräume 10, 9 Kartenblätter + Begleittext. G. Fischer Verlag, Stuttgart.
- und LIETH H., 1967: Klimadiagramm-Weltatlas. Fischer, Jena.
- WALTER M.B., 1950: *Wolffia papulifera* und *Lemna minima* in Ohio. Ohio J. Sci. 50, 266.
- WANGERMAN E., 1952: Studies in the morphogenesis of leaves. VIII. A note on the effects of length of day and removing daughter fronds on ageing of *Lemna minor*. New Phytol. 51, 355-358.
- und ASHBY E., 1950: Morphogenesis in *Lemna minor*. Proc. Linn. Soc. London 162, 10-13.
- 1951: Studies in the morphogenesis of leaves. VII., 1. Effects of light intensity and temperature on the cycle of aging and rejuvenation in the vegetative history of *Lemna minor*. New Phytol. 50, 186-199.
- und LACEY H.J., 1952: Some effects of ultra-violet radiation on *Lemna minor*. Nature 170, 126-127.
- 1953: Studies in the morphogenesis of leaves. IX. Experiments on *Lemna minor* with adenine, triiodobenzoic acid and ultra violet radiation. New Phytol. 52, 298-312.
- 1955: Studies in the morphogenesis of leaves. X. Preliminary experiments on the relation between nitrogen nutrition, rate of respiration and rate of ageing in fronds of *Lemna minor*. New Phytol. 54, 182-198.
- WATANABE K. und TAKIMOTO A., 1977: Effects of some metabolic inhibitors on flowering of *Lemna gibba* G3, a long-day duckweed. Plant Cell Physiol. 18, 1369-1372.
- 1979: Flower-inducing effects of benzoic acid and some related compounds in *Lemna paucicostata*. Plant Cell Physiol. 20, 847-850.
- WCISLO H., 1970: Karyological studies in Polish representatives of *Spadiciflorae*. Acta Biol. Crac. Ser. Bot. 13, 79-88.

- WEBER-OLDECOP D.W., 1969: Die Wasserpflanzengesellschaften im östlichen Niedersachsen. Diss. Hannover.
- 1971: Wasserpflanzengesellschaften im östlichen Niedersachsen (I. + II.). Int. Rev. Gesamten Hydrobiol. 55, 913-967.
 - 1973: Anmerkung zur Entdeckungsgeschichte von *Wolffia arrhiza* in Niedersachsen. Gött. Flor. Rundbr. 7, 29-30.
- WEDDELL H.A., 1849: Observations sur une espèce nouvelle du genre *Wolffia*. Ann. Sci. Nat. 12, 155-173.
- 1854: Note sur le *Wolffia Michelii* Schleiden. Bull. Soc. Bot. France 1, 54.
- WEIK K.L. und MOHLENBROCK R.H., 1968: Contributions to a flora of Illinois. 3. *Lemnaceae*. Trans. Ill. State Acad. Sci. 61, 382-399.
- WEIMER W.C. und ARMSTRONG D.E., 1979: Naturally occurring organic phosphorus compounds in aquatic plants. Environ. Sci. Technol. 13, 826-829.
- WEINBAUM S.A., GRESSEL J., REISFELD A. und EDELMAN M., 1979: Characterization of the 32,000 dalton chloroplast membrane protein. III. Probing its biological function in *Spirodela*. Plant Physiol. 64, 828-832.
- WELLMANN E. und GRISEBACH H., 1971: Purification and properties of an enzyme preparation for *Lemna minor* L. catalyzing the synthesis of UDP-apiose and UDP-D-xylose from UDP-D-glucuronic acid. Biochim. Biophys. Acta 235, 389-397.
- WELWITSCH F., 1859: Apontam. Phytogeogr. sobre a flora da prov. de Angola. Annaes Conselho Ultram. 55, 578.
- WERNER D., 1967: Untersuchungen über die Rolle der Kieselsäure in der Entwicklung höherer Pflanzen. Planta 76, 25-36.
- WHITE H.L., 1936a: The interaction of factors in the growth of *Lemna*. VII. The effect of potassium on growth and multiplication. Ann. Bot. 50, 175-196.
- 1936b: The interaction of factors in the growth of *Lemna*. VIII. The effect of nitrogen on growth and multiplication. Ann. Bot. 50, 403-417.
 - 1936c: The interaction of factors in the growth of *Lemna*. IX. Further observations on the effect of light intensity on growth and multiplication. Ann. Bot. 50, 827-848.
 - 1937: The interaction of factors in the growth of *Lemna*. XI. Nitrogen and light intensity in relation to growth and assimilation. XII. Nitrogen and light intensity in relation to root length. Ann. Bot. (n.s.) 1, 623-648; 649-654.
 - 1938: The interaction of factors in the growth of *Lemna*. XIII. Potassium and light intensity in relation to root length. Ann. Bot. (n.s.) 2, 911-917.
 - 1939: The interaction of factors in the growth of *Lemna*. XIV. Potassium and light intensity in relation to growth and assimilation. Ann. Bot. (n.s.) 3, 619-648.
 - 1940: The interaction of factors in the growth of *Lemna*. XV. On a rhythmic growth cycle of *Lemna* colonies associated with transference to a potassium free nutrient solution. Ann. Bot. 4, 495-504.
 - und TEMPELMANN W.G., 1937: The interaction of factors in the growth of *Lemna*. X. Nitrogen and light intensity in relation to respiration. Ann. Bot. (n.s.) 1, 191-204.
- WIEGLEB G., 1976: Untersuchungen über den Zusammenhang zwischen Chemismus und Makrophytenvegetation stehender Gewässer in Niedersachsen. Diss. Göttingen. 113 S.

- 1978a: Der soziologische Konnex der 47 häufigsten Makrophyten der Gewässer Mitteleuropas. *Vegetatio* 38, 165-174.
- 1978b: Untersuchungen über den Zusammenhang zwischen hydrochemischen Umweltfaktoren und Makrophytenvegetation in stehenden Gewässern. *Arch. Hydrobiol.* 83, 443-484.
- 1978c: Vergleich ökologischer und soziologischer Artengruppen und Makrophyten des Süßwassers. *Verh. Ges. Oekol. Kiel* 1977, 243-249.
- WIGHTMAN F. und SETTERFIELD G., 1968: *Biochemistry and Physiology of Plant Growth Substances*. Ottawa. 1593-1607.
- WIKOFF S.D., 1949: *Lemna trisulca*, a southward extension of range on the Atlantic coastal plain. *Bartonia* 25, 72-73.
- WILLIS J.H., 1962: *Lemnaceae*. In: *A handbook to plants in Victoria*, 1, 268-271. Melbourne Univ. Press.
- WILLOMITZER J., LUCKY Z. und KOLAR Z., 1972: Molluscicidal effectiveness of fluorinated derivatives of salicylic acid. *Acta Vet.* 41, 31-37.
- WILSON W., 1830: *Lemna gibba*. Remarks on the structure and germination. *Hooker Bot. Miscellany* 1, 145-149.
- WINTER E.J., 1937: Growth of *Lemna minor*. *Nature* 139, 1070.
- WISE D.L., AUGENSTEIN D.C. und RYTHER J.H., 1979: Methane fermentation of aquatic biomass. *Resour. Recovery Conserv.* 4, 217-238.
- WITZTUM A., 1966: A descriptive and experimental study of symmetry in *Lemna*. Ph. D. thesis, Cornell Univ., Ithaca, N.Y.,
- 1974a: Ultraviolet irradiation and pigment cell idioblasts in *Spirodela oligorhiza*. *Am. J. Bot.* 61, 713-716.
- 1974b: Abscission and the axillary frond in *Spirodela oligorhiza* (*Lemnaceae*). *Am. J. Bot.* 61, 805-808.
- 1977: An ecological niche for *Lemna gibba* L. that depends on seed formation. *Israel J. Bot.* 26, 36-38.
- 1979: Morphogenesis of asymmetry and symmetry in *Lemna perpusilla* Torr. *Ann. Bot.* 43, 423-430.
- und KEREN O., 1978: Factors affecting abscission in *Spirodela oligorhiza* (*Lemnaceae*). II. Sucrose. *New Phytol.* 80, 111-116.
- POSNER H.B. und GOWER R.A., 1979: Phototactic chloroplast displacement in the photosynthetic mutant, *Lemna paucicostata* strain 1073. *Ann. Bot.* 44, 1-4.
- und SHAPIRA Z., 1977: Exudation and chloroplast fragmentation as a result of ultraviolet irradiation in *Spirodela oligorhiza*. *Israel J. Bot.* 26, 109-114.
- WOLEK J., 1974a: Kritische Uebersicht der Pleustongesellschaften Polens (Klasse *Lemmnetea*). *Fragm. Florist. Geobot.* 20, 365-380.
- 1974b: A preliminary investigation in interactions (competition, allelopathy) between some species of *Lemna*, *Spirodela*, and *Wolffia*. *Ber. Geobot. Inst. ETH, Stiftung Rübel*, 42, 140-162.
- 1974c: Experimental control of flowering in *Spirodela polyrrhiza* (L.) Schleid., strain 7401 - a preliminary report. *Ber. Geobot. Inst. ETH, Stiftung Rübel*, 42, 163-170.
- 1979: Experimental investigations on the composition and allelopathy between *Spirodela polyrrhiza* (L.) Schleid. and *Wolffia arrhiza* (L.) Wimm. *Fragm. Flor. Geobot.* 25, 281-350.
- WOLFE H.S., 1926: The auxinom question. *Bot. Gaz.* 81, 228-231.
- WOLFF J.F., 1801: *Commentatio de Lemna Altdorfii et Norimbergae*. 32 S.

- 1804: Extrait d'une dissertation sur les lenticules. Bull. Sci. Soc. Philomath. Paris 3 (79), 142-143.
- WONG K.F. und DENNIS D.T., 1973: Aspartokinase in *Lemna minor* L.: Studies on the in vivo and in vitro regulation of the enzyme. Plant Physiol. 51, 327-331.
- und COSSINS E.A., 1976: Control of methionine synthesis by lysine in *Lemna minor*. Phytochemistry 15, 921-925.
- WOODFORD E.K., 1950: Assessment of relative toxicity and evaluation of selective herbicides. Proc. Int. Bot. Congr. Stockholm 7, 186-190.
- WOZAKOWSKA-NATKANIEC H., 1977a: Ecological radiosensitivity of *Lemna minor* L. and *Spirodela polyrrhiza* (L.) Schleiden. Monogr. Bot. 55, 53-106.
- 1977b: Ecological differentiation of *Lemna minor* L. and *Spirodela polyrrhiza* (L.) Schleiden populations. Acta Soc. Bot. Pol. 46, 201-229.
- WRIGHT C.H., 1909: *Wolffia denticulata* Hegelm. Kew Bull. 1909, 394.
- WRIGHT D.M., 1973: The Fly-fisher's plants. Their value in trout waters. David u. Charles, Newton Abbot, England.
- WROBLEWSKI R., 1973: A fine structural investigation of the chloroplasts from the root of *Lemna minor* L. J. Submicrosc. Cytol. 5, 97-105.
- WUNDER W., 1947: Verschiedenartige Nutzung von Karpfenteichen. Allg. Fischerei-ztg. 72, 300-306.
- WYNNE-EDWARDS V.C., 1941: *Wolffia punctata* Griseb. in Quebec. Canad. Fld. Nat. 55, 110.
- YOKOTA R. und SHIMADA J., 1958: Physiological action of kojic acid on green plants. A growth-promoting action on *Spirodela polyrrhiza*. Kagaku (Tokyo) 28, 531.
- YONE Y. und TOMIZAMA T., 1952: (Studies on antianaemic ingredients of the liver. VI. The growth promoting effect of liver extract and its purified fractions upon *Lemna paucicostata* Hegelm. VII. The growth promoting effect of several antianaemic substances upon *Lemna paucicostata* Hegelm.) jap. Bull. Jap. Soc. Sci. Fisheries 17, 659-668.
- YOSHIMURA F., 1941: On the minimum concentration of manganese necessary for the growth of Lemnaceae plants. Bot. Mag. 55, 163-175.
- 1943: (The significance of molybdenum for the growth of Lemnaceae plants) jap. Bot. Mag. 57, 371-386.
- 1944: (Heterotrophic culture of some lemnaceous plants with sugars) jap. Bot. Mag. 58, 15-26.
- 1950: Physiological studies in lemnaceous plants. Bot. Mag. 63, 63-69.
- 1952: Influence of the light on the consumption of nitrate and ammonia in lemnaceous plants. Bot. Mag. 65, 176-185.
- YOUNG M. und SIMS A.P., 1972: The potassium relations of *Lemna minor* L.: I. Potassium uptake and plant growth. J. Exp. Bot. 23, 958-969.
- YUI S., 1956: (Duckweeds in rice fields and their removal in an easy manner) jap. Nogyo Oyobi Engei 31, 1113-1116.
- YUKAWA I. und TAKIMOTO A., 1976: Flowering response of *Lemna paucicostata* in Japan. Bot. Mag. 89, 241-250.
- ZENNIE T.M. und MC CLURE J.W., 1977: The flavonoid chemistry of *Pistia stratiotes* L. and the origin of the Lemnaceae. Aquat. Bot. 3, 49-54.
- ZIMMERMANN A., 1980: Die Bedeutung des Ca- und Mg-Gehaltes von Gewässern für das Leben von Wasserpflanzen am Beispiel der Familie der Lemnaceae (Wasserlinsen). Diplomarbeit Geobot. Inst. ETH, Stiftung Rübel, Zürich.

- ZURZYCKA A., 1951: The influence of the wave length of light on the movements of chloroplasts in *Lemna trisulca*. Acta Soc. Bot. Pol. 21, 17-37.
- und ZURZYCKI J., 1950: The influence of temperature on phototactic movements of chloroplasts. Acta Soc. Bot. Pol. 20, 665-680.
- 1957: Cinematographic studies on phototactic movements of chloroplasts. Acta Soc. Bot. Pol. 22, 177-206.
- ZURZYCKI J., 1953: Arrangements of chloroplasts and light absorption in plant cell. Acta Soc. Bot. Pol. 22, 299-320.
- 1955a: Chloroplast arrangement as a factor in photosynthesis. Acta Soc. Bot. Pol. 24, 27-63.
- 1955b: Photosynthesis in polarized light. Acta Soc. Bot. Pol. 24, 539-547.
- 1955c: The dependence of photosynthesis on the arrangement of chloroplasts. Experientia 11, 263.
- 1957a: The destructive effect of intense light on the photosynthetic apparatus. Acta Soc. Bot. Pol. 26, 157-175.
- 1957b: Formative effects of various spectral regions of light on *Lemna trisulca* L. Med. Landbouwhog. Wageningen 57, 1-14.
- 1962: The action spectrum for the light depended movements of chloroplasts in *Lemna trisulca* L. Acta Soc. Bot. Pol. 31, 489-538.
- 1969: Experimental modification of the reaction pattern of *Lemna* leaf cells to polarized light. Protoplasma 68, 193-207.
- 1970: Light respiration of *Lemna trisulca*. Acta Soc. Bot. Pol. 39, 485-495.
- 1971: Effect of linear polarized light on the O₂ uptake in leaves. Bichem. Physiol. Pflanz. 162, 310-317.

Adresse des Autors: Prof. Dr. E. Landolt
 Geobotanisches Institut ETH
 Stiftung Rübel
 Zürichbergstrasse 38
 CH-8044 Zürich