

Ilana Herrnstadt & Daniel Zohary

C. Clara Heyn (1924-1998)



Professor C. Clara Heyn passed away in her Jerusalem home on December 27, 1998. She left an intertwined and outstanding legacy of close friends, among whom were family, colleagues and students. Some of her former students later became her colleagues. She seemed to have unlimited time and energy to assist those who sought her advice. Heyn was a fascinating person and conversationalist and her circle of friends was as broad as her knowledge and interests.

Chaia Clara Heyn (nee Blau) was born June 13, 1924 in Cluj, Romania, and moved with her family to Austria in 1931. Following the “Anschluss” in 1938 her family succeeded to escape to Israel (then British-Mandate Palestine). The teenager quickly adjusted to the new and challenging environment. Upon her arrival she trained to be a secondary school teacher at Tel Aviv’s College for Teachers and was employed as a school teacher. Subsequently she entered The Hebrew University of Jerusalem where she studied biology, and specialised in Botany. She earned her M.Sc. in 1954 and her Ph. D. in 1960. During this period, she also married and began to raise a family. (For a more detailed account of her life history see *Taxon* **48**: 427-430, 1999).

In 1962, Heyn was accepted as a member of the academic staff of the Department of Botany, the Hebrew University of Jerusalem. From the outset she excelled both in teaching and research. She was highly appreciated – both by the students and her colleagues – for the clarity of her lectures, and for her in-depth and meticulous preparation of the laboratory sessions. She retained this quality of teaching throughout her career.

Her formative years in research culminated in the publication, in 1963, of her monograph on the annual species of the genus *Medicago*. This work placed her in the forefront of Mediterranean plant taxonomy. Among her early activities in the Department of Botany was her involvement (together with her former teachers Michael Zohary and Naomi Feinbrun-Dothan) in the development of The Hebrew University Herbarium. She became increasingly involved with this research facility and subsequently was appointed as its director.

Throughout her career, Prof. Heyn focused on taxonomic plant research and contributed significantly to our understanding of numerous genera belonging to the *Leguminosae*, *Umbelliferae* and *Compositae*. In addition to the classical approach, Heyn was keen to elucidate the processes of speciation in the groups she studied. She was quick to appreciate, introduce and adopt new taxonomic tools and techniques (e.g. SEM, flavonoid content, and computer database analysis) that expanded the parameters useful for species characterisation and species delimitation. Her use of SEM techniques to visualise differences in seed coat structure in *Lupinus* received recognition as a novel approach.

In addition to *Medicago*, some of the genera she studied in depth were *Trigonella*, *Lotus*, *Onobrychis*, *Lupinus*, *Prangos*, *Heptaptera*, and *Calendula*. Within *Lotus* her attention focused on the *L. creticus*, *L. peregrinus*, and *L. angustissimus* groups. In *Lupinus*, she conducted a taxonomic and evolutionary study of the old world species. The revision of *Prangos* and *Heptaptera* included re-evaluation of generic delimitation based on karyology, fruit anatomy and secondary metabolites. The study of the annual species of *Calendula* assessed the affinities between species based on fruit morphology, chromosome numbers and interspecific crosses.

At an early stage of her career she became intrigued by the bryophytes and their ecology but could not devote research time to the group until about 20 years ago. Together with one of us (I.I.), she took the lead in the study of the mosses of Israel which later resulted in the preparation of the book *Bryophyte flora of Israel and some adjacent regions*.

Prof. Heyn made numerous contributions to regional floras. Among them were treatments of *Medicago*, *Lotus*, *Tetragonolobus*, *Scorpiurus*, *Prangos*, and *Heptaptera* for *Flora of Turkey and the East Aegean Islands*, *Medicago* for *Flora iranica* and *Flore de France*, and *Calendula* for the *Nouvelle flore du Liban et de la Syrie*.

Locally understudied plant groups (e.g. the umbellifers and mosses native to Israel) were always her concern. She encouraged and directed both students and former students to study them and to apply a variety of modern techniques in doing so.

Heyn was active in popularisation of botanical research and the knowledge of the local flora. She contributed, in Hebrew, numerous articles and chapters to Israeli magazines, encyclopaedias, and nature guides. One of the most effective contributions of this kind

was her coverage of numerous botanical entries in *Encyclopaedia hebraica* (vol. 24-32, 1972-1981).

Heyn was one of the founders of the Organisation for the Taxonomic Investigation of the Mediterranean Area (OPTIMA) in 1974, and served on its board and executive council until 1993. She continued serving on its various commissions until her last days. In 1995 she received the OPTIMA Gold Medal, honouring her for her scientific contributions to the phytotaxonomy of the Mediterranean region.

Three taxa are named in her honour: *Medicago* sect. *Heyniana* Greuter, *Medicago heyniana* Greuter, and *Prangos* subg. *Heynia* Pimenov & V. H. Tikhom.

Chronological list of scientific publications by C. C. Heyn (not including book reviews, abstracts, and texts in Hebrew only)

By Nir L. Gil-ad

Research papers

- Heyn, C. C. 1956: Some chromosome counts in the genus *Medicago*. — *Caryologia* **9**: 160-165.
- 1959: The genus *Medicago* L. in Linnaeus's Species Plantarum. — *Bull. Res. Council Israel, Sect. D, Bot.*, **7**: 157-174.
- 1962: Studies of bulbous *Poa* in Palestine. I. The agamic complex of *Poa bulbosa*. — *Bull. Res. Council Israel, Sect. D, Bot.*, **11**: 117-126.
- 1962: On the cytotaxonomy of *Onobrychis crista-galli* (L.) Lam. and *O. squarrosa* Viv. — *Bull. Res. Council Israel, Sect. D, Bot.*, **11**: 177-182.
- 1963: Cytotaxonomy of two legumes from Israel (*Onobrychis caput-galli* (L.) Lam. and *Hedysarum spinosissimum* L.). — *Israel J. Bot.* **12**: 187-191.
- 1966: A study of the *Lotus peregrinus* group. — *Israel J. Bot.* **15**: 37-47.
- & Raviv, V. 1966: Experimental taxonomic studies in the genus *Scorpiurus* (*Papilionaceae*). — *Bull. Torrey Bot. Club* **93**: 259-267.
- & Herrmstadt, I. 1967: The *Lotus creticus* group. — *Kew Bull.* **21**: 299-309.
- 1968: An evolutionary study of fruit morphology in the tribe *Trigonelleae* (*Leguminosae*). — *Phytomorphology* **18**: 54-59.
- 1969: The typification of *Medicago* (*Leguminosae*). — *Taxon* **18**: 667-669.
- 1970: Studies in *Lotus*. III. The *L. angustissimus* group. — *Israel J. Bot.* **19**: 271-292.
- 1971: Biosystematic approaches to the solution of taxonomic problems in Israel. — Pp. 181-193 in: Davis, P. H., Harper, P. C. & Hedge, I. C. (ed.), *Plant life of south-west Asia*. — Edinburgh.
- & Dafni, A. 1971: Studies in the genus *Gagea* (*Liliaceae*). I. The platyspermous species in Israel and neighbouring areas. — *Israel J. Bot.* **20**: 214-233.
- Herrmstadt, I. & Heyn, C. C. 1971: Studies in *Heptaptera* (*Umbelliferae*) I: a biosystematic study of *Heptaptera* in Israel. — *Notes Roy. Bot. Gard. Edinburgh* **31**: 81-89.
- & — 1971: Studies in *Heptaptera* (*Umbelliferae*) II: Taxonomic revision. — *Notes Roy. Bot. Gard. Edinburgh* **31**: 91-107.
- Gruenberg-Fertig, I., Heyn, C. C. & Herrmstadt, I. 1973: Typification of *Cachrys libanotis* L. (*Umbellif.*) — *Taxon* **22**: 425-434.
- , Zohary, M. & Heyn, C. C. 1974: Proposal to conserve the generic name 5985 *Hippomarathrum* Link (1821). — *Taxon* **23**: 438-440.
- Heyn, C. C., Dagan, O. & Nachman, B. 1974: The annual *Calendula* species: taxonomy and relationships. — *Israel J. Bot.* **23**: 169-201.

- Herrnstadt, I. & Heyn, C. C. 1975: New combinations in *Cachrys* L. as a genus distinct from *Hippomarathrum* Link. — Notes Roy. Bot. Gard. Edinburgh **33**: 441-443.
- & — 1975: A study of *Cachrys* populations in Israel and its application to generic delimitation. — Bot. Not. **128**: 227-234.
- Heyn, C. C. 1976: An old question revived: what are the stipules of *Lotus*.—Lotus Newslett. **7**: 3-5.
- Mattatia, J. & Heyn, C. C. 1976: A new *Lathyrus* from Israel: *L. hirticarpus* sp. nov. — Israel J. Bot. **25**: 216-220.
- Herrnstadt, I. & Heyn, C. C. 1977: A monographic study of the genus *Prangos* (*Umbelliferae*). — Boissiera **26**: 1-91.
- Heyn, C. C. & Dafni, A. 1977: Studies in the genus *Gagea* (*Liliaceae*). II. The non-platyspermous species from the Galilee, the Golan Heights, and Mt. Hermon. — Israel J. Bot. **26**: 11-22.
- & Herrnstadt, I. 1977: Seed coat structure of Old World *Lupinus* species. — Bot. Not. **130**: 427-435.
- Pazy, B., Heyn, C. C., Herrnstadt, I. & Plitmann, U. 1977: Studies in populations of the Old World *Lupinus* species. I. Chromosomes of the East-Mediterranean lupines. — Israel J. Bot. **26**: 115-127.
- Plitmann, U. & Heyn, C. C. 1978: The genus *Lupinus* in the Old World – problems and prospects. — Israel J. Bot. **27**: 30-31.
- Herrnstadt, I., Heyn, C. C. & Crosby, M. R. 1980: New data on the moss genus *Gigaspermum*. — Bryologist **83**: 536-541.
- Plitmann, U., Heyn, C. C. & Pazy, B. 1980: Biological flora of Israel. 7. *Lupinus palaestinus* Boiss. and *L. pilosus* Murr. — Israel J. Bot. **28**: 108-130.
- Band, L., Heyn, C. C. & Plitmann, U. 1981: Distribution of cyanogenesis in *Lotus*. — Taxon **30**: 601-608.
- Heyn, C. C. 1981: Tribe 23. *Trifolieae* (Bronn) Benth. (1865). — Pp. 383-385 in: Polhill, P. H. & Raven, P. H. (ed.), Advances in legume systematics. — Kew.
- Pazy, B., Plitmann, U. & Heyn, C. C. 1981: Genetic relationships between *Lupinus pilosus* and *L. palaestinus* (*Fabaceae*). — Pl. Syst. Evol. **137**: 39-44.
- Weitz, S. & Heyn, C. C. 1981: Intra-specific differentiation within the cosmopolitan moss species *Funaria hygrometrica* Hedw. — Bryologist **84**: 315-334.
- Herrnstadt, I., Heyn, C. C., Ben-Sasson, R. & Crosby, M. R. 1982: New records of mosses from Israel. — Bryologist **85**: 214-217.
- Di Nola, L., Mayer, A. M. & Heyn, C. C. 1983: Respiration, photosynthesis and drought tolerance in mosses from various habitats in Israel. — Israel J. Bot. **32**: 189-202.
- Heyn, C. C. & Joel, A. 1983: Reproductive relationships between annual species of *Calendula* (*Compositae*). — Pl. Syst. Evol. **143**: 311-329.
- Plitmann, U. & Heyn, C. C. 1985: Old World *Lupinus*: taxonomy, evolutionary relationships and links with New World species. — Pp. 55-66 in: Anonymous (ed.), Proceedings of the IIIrd International Lupine Congress, part I: genetic resources. La Rochelle (France) – 4-8 June 1984. — La Rochelle.
- Heyn, C. C. & Snir, S. 1986: Selfing and pollen allocation in some *Asteraceae*. — Proc. Roy. Soc. Edinburgh, B, **89**: 181-192.
- Plitmann, U., Heyn, C. C. & Weinberger, H. 1986: Comparative taxonomy of some wild species allied to *Lathyrus sativus*. — Pp. 8-21 in: Kaul, A. K. & Combes, D. (ed.), *Lathyrus* and lathyrism. — New York.
- Herrnstadt, I. & Heyn, C. C. 1987: Bryology in Israel. [In: Horton, D. G. (ed.), Bulletin of Bryology XXIV]. — Taxon **36**: 772-773.
- Heyn, C. C. 1988: Investing in adaptations to rare events – a reproductive strategy. — Lagasalia **15 (extra)**: 29-36.

- Small, E., Jomphe, M. & Heyn, C. C. 1988: Reduction of *Medicago makranica* (Leguminosae tribe *Trifolieae*) to *Indigofera nephrocarpa* (tribe *Indigofereae*). — *Taxon* **37**: 964-966.
- Herrnstadt, I. & Heyn, C. C. 1989: Variation in spore texture in the genus *Pottia* (*Pottiaceae*) as opposed to the uniformity in some cleistocarpous mosses. — Pp. 281-283 in: Herban, T. & McQueen, C. B. (ed.), Proceedings of the sixth meeting of the Central and East European Bryological Working Group (CEBWG), Liblice, Czechoslovakia, 12-16 September, 1988. — Průhonice.
- Heyn, C. C. & Pazy, B. 1989: The annual species of *Adonis* (*Ranunculaceae*) – a polyploid complex. *Pl. Syst. Evol.* **168**: 181-194.
- Boaz, M., Plitmann, U. & Heyn, C. C. 1990: The ecogeographic distribution of breeding systems in the *Cruciferae* (*Brassicaceae*) of Israel. — *Israel J. Bot.* **39**: 31-42.
- Herrnstadt, I., Heyn, C. C. & Crosby, M. R. 1991: A checklist of the mosses of Israel. — *Bryologist* **94**: 168-178.
- Heyn, C. C. & M. Waldmann 1992: In situ conservation of plants with potential economic value. — Pp. 235-239 in: Adams, R. P. & Adams, J. E. (ed.), Conservation of plant genes. — San Diego.
- Herrnstadt, I. & Heyn, C. C. 1993: New species linking *Phascum* and *Pottia*. — *Nova Hedwigia* **57**: 135-139.
- Heyn, C. C. 1993: Computerized herbaria in scientific research. — *Webbia* **48**: 601-604.
- Schuster, A., Noy-Meir, I., Heyn, C. C. & Dafni, A. 1993: Pollination-dependent female reproductive success in a self-compatible outcrosser, *Asphodelus aestivus* Brot. — *New Phytol.* **123**: 165-174.
- Boaz, M., Plitmann, U. & Heyn, C. C. 1994: Reproductive effort in desert versus Mediterranean crucifers: the allogamous *Erucaria rostrata* and *E. hispanica* and the autogamous *Erophila minima*. — *Oecologia* (Berlin) **100**: 286-292.
- Heyn, C. C., Madmony, A., Alon, G. & Werker, E. 1994: Regulation of the breeding systems of some self-compatible *Lotus* species. — Pp. 86-89 in: Beuselinck, P. R. & Roberts, C. A. (ed.), Proceedings of the First International *Lotus* Symposium, March 22-24, 1994, Missouri Botanical Gardens. — St Louis.
- Herrnstadt, I. & Heyn, C. C. 1997: *Neocryptodiscus papillaris* (Boiss.) Herrnst. & Heyn – a new combination based on *Cachrys papillaris* Boiss. — *Candollea* **52**: 181-184.
- & — 1999: Three new taxa of *Pottiaceae* (*Musci*) from Israel: *Acaulon longifolium*, *Pottia gemmifera* and *Barbula ehrenbergii* var. *gemmaipara*. — *Nova Hedwigia* **69**: 229-235.

Contributions to flora

- Heyn, C. C. 1970: *Medicago* L. [with Davis, P. H.], *Lotus* L., *Tetragonolobus* Scop., *Scorpiurus* L. — Pp. 483-511, 518-531, 531-532, 547-548 in: Davis, P. H. (ed.), Flora of Turkey and the East Aegean islands, **3**. — Edinburgh.
- Herrnstadt, I. & Heyn, C. C. 1972: *Prangos* Lindl., *Heptaptera* Marg. et Reuter. — Pp. 382-388, 388-390 in: Davis, P. H. (ed.), Flora of Turkey and the East Aegean islands, **4**. — Edinburgh.
- Mouterde, P. & Heyn, C. C. 1983: *Calendula*. — Pp. 432-435 in: Mouterde, P. (ed. by Charpin, A. & Dittrich, M.), Nouvelle flore du Liban et de la Syrie, **3**. — Beyrouth.
- Heyn, C. C. 1984: *Medicago*. — Pp. 253-271 in: Rechinger, K. H. (ed.), Flora iranica, **157**. — Graz.
- Heyn, C. C. 1984: *Medicago* L. — Pp. 1743-1750 in: Guinochet, M. & Vilmorin, R. de (ed.), Flore de France. — Paris.
- Herrnstadt, I. & Heyn, C. C. 1987: *Heptaptera*, *Prangos*. — Pp. 168-170, 190-206 in: Rechinger, K. H. (ed.), Flora iranica, **162**. — Graz.

Books

- Heyn, C. C. 1963: The annual species of *Medicago*. — Scripta Hierosolymitana, **12**. — Jerusalem.
- Zohary, M., Heyn, C. C. & Heller, D. 1980-1983: Conspectus florae orientalis: an annotated catalogue of the flora of the Middle East, **1-2**. — Jerusalem.
- Heller, D. & Heyn, C. C. 1986-1994: Conspectus florae orientalis: an annotated catalogue of the flora of the Middle East, **3-9**. — Jerusalem.
- Plitmann, U., Heyn, C. C., Danin, A. & Shmida, A. 1983: Pictorial flora of Israel. — Tel Aviv [in Hebrew, with English preface].
- Heyn, C. C & Herrnstadt, I. (ed.) [in press]: The bryophyte flora of Israel and adjacent regions. Part I: *Bryopsida* (*Musci*, mosses), by Herrnstadt, I. & Heyn, C. C.; Part II: *Anthocerotopsida* (hornworts) and *Hepaticopsida* (liverworts), by Bischler, H. & Jovet-Ast, S. — Jerusalem.

Address of the authors:

Dr Ilana Herrnstadt, Dr Daniel Zohary & Dr Nir L. Gil-ad, Department of Evolution, Systematics and Ecology, Hebrew University of Jerusalem, Jerusalem 91904, Israel.