

Once upon a time...
Historical vignettes from the Archives of ICMI:
About the ICMEs and their logos (I)—The first and second
ICMEs

Commission Internationale de l'Enseignement Mathématique
(The International Commission on Mathematical Instruction)

Bernard R. HODGSON*

To the memory of Jerry P. Becker (1937–2022)
The last of the “Old Hands”



FIGURE 1
Jerry Becker (Courtesy Southern Illinois University Carbondale).

*Curator of the ICMI Archive

Professor Jerry Page Becker passed away on April 16, 2022. He was for more than forty years a member of the Southern Illinois University (Carbondale) faculty. Professor Becker has been a long-time friend of ICMI, in addition to his deep involvement in his local and national mathematics education communities—notably in connection with the National Council of Teachers of Mathematics (NCTM) and the U.S. National Commission on Mathematical Instruction (USNC/MI), the USA Subcommittee for ICMI. Through his well-known and most valuable “Jerry Becker email distribution list”, he supported and facilitated, during more than twenty-five years, the dissemination of information about mathematics education, both in relation to the USA context and internationally.

He is the sole scholar having attended the first thirteen ICME congresses, from ICME-1 (Lyon, 1969) to ICME-13 (Hamburg, 2016), almost half-a-century later. My former colleague Claude Gaulin, on the occasion of the ICME-7 congress held in 1992 at Université Laval (Québec), coined the expression ‘Vieux routiers’ (‘Old Hands’) to identify those having participated to all the ICMEs. There were twelve of them at ICME-7, who then met for a special dinner (which Jerry Becker described to me, in a recent personal email, as a grand gathering which he remembered vividly): Josette Adda, Shmuel Avital, Jerry P. Becker, Alan W. Bell, John C. Egsgard, Claude Gaulin, Geoffrey Howson, Bernhard H. Neumann, Ruben Schramm, Hilary Shuard, Hans-Georg Steiner and Erich C. Wittmann [11, pp. 446–447]. Claude himself attended all the ICMEs up to ICME-12 (Seoul, 2012). Jerry is the only one present at the first thirteen ICMEs, a feat of which he felt rightly proud. He was the last of the “Old Hands”.

This vignette is the first in a series proposing selected pieces of information about the International Congress on Mathematical Education (ICME), without doubt a component of paramount importance in the program of activities of the International Commission on Mathematical Instruction (ICMI). Besides highlighting aspects of interest specific to the different congresses as supported by various archive documents, in particular with respect to the overall structure of each congress program, I also wish in this series to emphasize an interesting visual (and aesthetic) ingredient of the ICMEs: the congress logos that were designed on these occasions.

I will concentrate for the moment on the first two ICMEs held in 1969 and 1972, thus pointing to a vibrant moment in the life of ICMI that witnessed the creation and development of a new strand central to its mission. However, this current vignette is in that connection a bit contradictory with the general series title, as the presentation of

the ICME logos gallery will have to wait for a next paper: the tradition of adopting a logo started only with the third ICME in 1976. (It may be reminded in a similar vein that a logo for ICMI itself was adopted only somewhat recently, in 2004—see in that connection my third ICMI Archive vignette [12].)

The background leading to the very first International Congress on Mathematical Education, held in Lyon in August 1969, has already been discussed in an earlier Archive vignette [14], in relation among others to the minimality of the information then conveyed by ICMI to its mother organization, the International Mathematical Union (IMU), concerning the conception and preparation of the congress. At a meeting of the ICMI Executive Committee taking charge in 1967 under the presidency of Hans Freudenthal, jointly with ICMI “members-at-large” and national delegates—these composed ICMI as a Commission, in agreement with the terms of reference of the time, see [13]—, it was decided, following Freudenthal’s suggestion, to organize an “ICMI Congress” (“Congrès de la C.I.E.M”). Totally devoted to the teaching and learning of mathematics, this ICME, as it came to be known, was to be disjoint from the International Congress of Mathematicians (ICM) and its education sessions, and to occur in 1969, that is a year prior to the following ICM. The proposed plan was then to build the program on “invited talks and personal communications” and to have the new congress be organized in France [4, page 245].

A certain fluctuation occurred during 1968 around the preparation of the ICMI congress—partly caused by the “Spring troubles in Paris”, as mentioned by Freudenthal in a note to the ICMI National Subcommissions [8]. It was for a time intended to have the congress in Paris or Versailles at the end of August 1969 [8], but it was finally decided to host it in Lyon, among other reasons because of availability of better facilities at the university [9].

When compared to the ICMEs as we know them today, this first congress can be seen as having a rather peculiar flavor, when one looks at the scientific program proposed to the participants. This is well captured in a passage in the same note from the ICMI President to the ICMI National Subcommissions:

“I discussed the organization once more with Prof. [Maurice] Glaymann [the French delegate to ICMI and main local organizer of the congress]. We think that stress should be laid on invited addresses (about 15) and panel discussions (4 afternoons). Free communications should be allowed but not encouraged. The organizing committee should be empowered to have only printed part of the free communications if there are too many.” [8]

The restrictions proposed by Freudenthal concerning the free communications were possibly influenced by his analysis of the functioning of the ICM, including its education sessions.

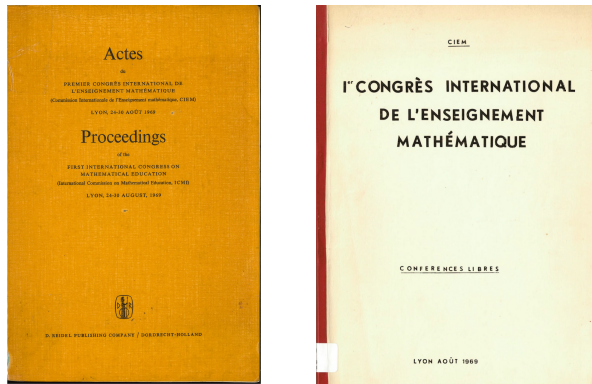


FIGURE 2

ICME-1: Proceedings and Book of Free Communications (Source: IMU Archive).

Eventually the ICME-1 program proposed a set of 21 one-hour invited lectures, all but one published in the Proceedings of the congress [7]. As reported in the Proceedings of the following ICME, these addresses were “supplemented by a number of short (15-minute) contributions by congress members” [15, page 4]. A book of 46 “conférences libres” [3], each paper having four pages on average, was thus also published on the occasion of ICME-1. See Figure 2. (Among these free communications is one by Jerry Becker. See also his testimony [2] on his participation to ICME-1.)

In his welcome speech at the opening of ICME-1, Freudenthal expressed his satisfaction that such an event was finally happening:

“Nous sommes heureux que nos collègues français aient voulu se charger de cette tâche lourde, mais pleine de promesse. Je vous assure que ce n’était pas une sinécure d’organiser ce congrès.” [10, page 5]

English translation:

“We are happy that our French colleagues were disposed to take charge of this onerous task, but full of promise. I can assure you that it was not a sinecure to organize the congress”.

The ICME-1 congress gathered 655 participants, coming from 42 different countries (see [1] for details).

At a meeting of ICMI (as a Commission) held in Lyon just before the opening of the ICME-1 congress, the Executive Committee, members-at-large and national delegates decided to modify the rhythm of the ICMEs, as it had been originally planned (see [4]): having these congresses one year prior to the ICMs made these two events too

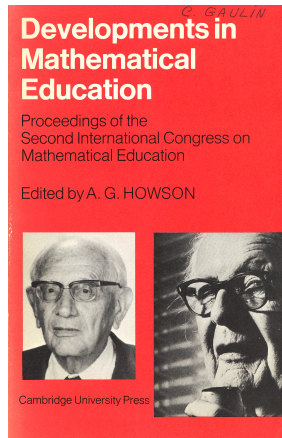


FIGURE 3
Proceedings of ICME-2 (Source: IMU Archive).

close one to the other, so that a shift of one year was adopted, leading to the two-year pattern between ICMEs and ICMs still the norm today [5, page 3]. While pointing to the importance of maintaining the education sessions inside the IMU congresses, the discussion during the meeting stressed that having independent congresses specifically devoted to mathematics education was preferable. As recorded in the report, IMU President Henri Cartan, present at the meeting, expressed his explicit support to the continuation of the “ICME experience” [5, page 2]. A call for bids for the second ICME to take place in 1972 was thus launched at ICME-1.

ICMI received a single invitation for ICME-2, but a solid one, coming from the Royal Society and the British National Committee for Mathematics (the official links between UK and IMU), with the support of the British members of the ICMI [6, pages 198–199] [15, page 5]. This proposal, with the congress occurring at the University of Exeter, was formally approved by the Commission at its meeting during the 1970 ICM in Nice [6]. See Figure 3.

A peculiarity of the book of Proceedings of the Exeter congress [15] is the care taken by the editor, Geoffrey Howson, to present a global vision of the congress, where it came from and how it aimed to achieve its main goals. In Part I of the book, entitled *A congress survey* [15, pages 3–74], many comments can be found not only on the “work” of the ICME-2 congress itself [15, pages 13–72], but also on the lessons learned from ICME-1 which lead the organizers to take some distance from the “Lyon model”, in particular with respect to the number of plenary lecturers, and to provide space and time for “effective discussion” and “active participation” [15, pages 5, 8]. As

a result, the ICME-2 program contained a mere seven plenary lectures (instead of 21 at ICME-1), the 15-minute talks by congress members were abandoned entirely, a set of thirty-eight working groups was orchestrated, and seventeen countries accepted the invitation of the Program Committee to mount so-called “national presentations”. Of course, the administrative and logistics challenge consequent upon such a vision of the congress was daunting [15, page 8]. But for the organizers this was the path to follow, as they were convinced of “the value of workshops in which one could discuss particular developments and even see mathematical learning and teaching taking place” and of national presentations “at which educators could talk about developments and projects in their own country and in which they might arrange demonstrations of materials and of actual classroom practice” [15, pages 8–9]. This spirit is well summarized by ICMI President Sir James Lighthill, speaking in his Presidential address of the work of the international Program Committee for ICME-2:

“A cardinal principle underlying the committee’s work has been the necessity of viewing mathematical education within the context of the total education of the individual. (...) The next most important principle underlying the architecture of our programme was that on all the different aspects of our subject active discussion must be permitted and encouraged. This congress is above all a congress for discussion, and to this end it has been organised so as to avoid any formal delivery of main lectures outside the periods of the seven plenary sessions.” [15, pages 90–91]

This conception of how the program of an ICME congress might be structured was marking a fundamental change of paradigm, notably when compared to the way the International Congresses of Mathematicians were organized (including its education sessions). It exerted a deep influence on the ICMEs to come. Geoffrey Howson pointed to this coming heritage in the conclusion of his congress survey:

“Writing so soon after the end of the congress, it is difficult to see its work in perspective, but talks with a variety of congress members suggested that the programme committee was right to reduce the number of plenary sessions and to place emphasis on working group discussions and national presentations. Such criticisms as there were, indicated that further progress is likely to come by improving this ‘tripartite’ system rather than by replacing it with yet another system.” [15, pages 72–73]

But Howson also added, concerning the global size of the program and the number of different activities: “The feeling that there was altogether too much happening at the same time was to be expected.” [15, page 73] This perception of an ICME program as being a kind of “too large buffet” is still found nowadays...

For Celia Hoyles—the first recipient of the ICMI Hans Freudenthal Award in 2003—, ICME-2 was her first ICME, where she was a teacher attendee. She presented in [16] her personal recollection of this event and the way it may have paved the way for her long and fruitful career as a leading researcher in mathematical education.

The number of participants at ICME-2 more than doubled from the first congress, and the number of countries represented increased to 76 [1].

Resolutions “embodying matters of great importance to mathematical education” [7, page 284] are found as appendices to the proceedings of both ICME-1 [7, pages 284–286] and ICME-2 [15, pages 305–306]. Various aspects of the teaching and learning of mathematics are addressed there, from the development of international cooperation and the needs of developing countries to professional development or topics to be addressed at future ICMEs. An interesting resolution concerning mathematical education as a living academic domain is found among those from the first ICME:

“The theory of mathematical education is becoming a science in its own right, with its own problems both of mathematical and pedagogical content. The new science should be given a place in the mathematical departments of Universities or Research Institutes, with appropriate academic qualifications available.”
[7, page 284]

French version:

“La pédagogie de la mathématique devient de plus en plus une science autonome avec ses problèmes propres de contenu mathématique et d’expérimentation. Cette science nouvelle doit trouver place dans les Départements de Mathématiques des Universités ou des Instituts de Recherche; ceux qui se qualifient dans cette discipline doivent pouvoir accéder à tous les grades universitaires.”
[7, page 285]

Didactics of mathematics was still in its youth then, and ICMI and the ICMEs contributed to its gain of maturity.

References

- [1] J. P. BECKER, An exploratory analysis of participants in the first, second, and third International Congresses on Mathematical Education (ICME). *ICMI Bulletin* 9 (June 1977) (1977), 4–11.
- [2] J. P. BECKER, ICME-1 experience. *ICMI News (July 2021)* (2021), article no. 6. www.mathunion.org/icmi/icmi-news-july-2021, visited on 7 June 2024.

- [3] CIEM, *1er Congrès international de l'enseignement mathématique: conférences libres* (Lyon août 1969). Commission internationale de l'enseignement mathématique, 1969.
- [4] A. DELESSERT, Compte rendu de la séance de la C.I.E.M (Utrecht, 26 août 1967). *Enseign. Math.* **13** (1967), 243–246.
- [5] A. DELESSERT, Compte rendu de la séance de la C.I.E.M (Lyon, 23 août 1969). 1969, *IMU Archive/SF 1/Ser 14: ICMI 1967–1980 [Box 14B]*.
- [6] A. DELESSERT, Compte rendu de la séance de la C.I.E.M (Nice, 5 septembre 1970). *Enseign. Math.* **16** (1970), 197–201.
- [7] Editorial Board of Educational Studies in Mathematics (eds.), *Proceedings of the First International Congress on Mathematical Education (International Commission on Mathematical Education [sic], ICMI)*. D. Reidel, Dordrecht, 1969. Also in *Educational Studies in Mathematics*, **2** (1969) 135–418.
- [8] H. FREUDENTHAL, Note to the ICMI National Subcommissions, 10 September. 1968, *IMU Archive/SF 1/Ser 14: ICMI 1967–1980 [Box 14B]*.
- [9] H. FREUDENTHAL, Note to the members of the International Commission on Mathematical Instruction, 8 October. 1968, *IMU Archive/SF 1/Ser 14: ICMI 1967–1980 [Box 14B]*.
- [10] H. FREUDENTHAL, Allocution du premier Congrès international de l'enseignement mathématique (Lyon, 24–31 août 1969). In *Proceedings of the First International Congress on Mathematical Education (International Commission on Mathematical Education [sic], ICMI)*, pp. 3–6, D. Reidel, Dordrecht, 1969.
- [11] C. GAULIN, B. R. HODGSON, D. H. WHEELER and J. C. EGSGARD (eds.), *Proceedings of the 7th International Congress on Mathematical Education*. Les Presses de l'Université Laval, Québec, 1994. MR [1290578](#)
- [12] B. R. HODGSON, Once upon a time... Historical vignettes from the Archives of ICMI: The ICMI logo. *ICMI News (November 2019)* (2019), 11–12.
- [13] B. R. HODGSON, [Once upon a time... Historical vignettes from the Archives of ICMI: A dilemma related to the ICMI terms of reference](#). *Enseign. Math.* **66** (2020), no. 3, 591–594.
- [14] B. R. HODGSON, [Once upon a time... Historical vignettes from the Archives of ICMI: The origins of the ICMEs](#). *Enseign. Math.* **67** (2021), no. 3, 455–462.
- [15] A. G. HOWSON (ed.), *Developments in mathematical education. Proceedings of the Second International Congress on Mathematical Education*. Cambridge University Press, Cambridge, 1973.
- [16] C. HOYLES, My first ICME: Stimulating a lifetime of inspiration. *ICMI News (July 2020)* (2020), 8–11.

(Reçu le 20 juin 2022)

Bernard R. HODGSON, Département de mathématiques et de statistique, Université Laval, 1045 avenue de la Médecine, Québec, G1V 0A6, Canada; e-mail: bernard.hodgson@mat.ulaval.ca