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CCC 2000—LONDON, THE FIRST INTERNATIONAL CONFERENCE ON COUNTERCURRENT CHROMATOGRAPHY, A CORNERSTONE FOR THE TECHNIQUE

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**CCC 2000—LONDON, THE FIRST
INTERNATIONAL CONFERENCE
ON COUNTERCURRENT
CHROMATOGRAPHY, A CORNERSTONE
FOR THE TECHNIQUE**

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ABSTRACT

The scientific content and the attendance at the first international conference on countercurrent chromatography, CCC 2000, held in London, September 11-14, are presented. The major events, scientific as well as social, are described. The CCC 2002 conference in Beijing, China, is announced.

INTRODUCTION

Yoichiro Ito developed the first CCC apparatus, a coil planet centrifuge machine, in 1966.¹ Since then, the CCC technique has slowly spread throughout

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Figure 1. Dr. H. Oka (Nagoya, Japan), Professor T.Y. Zhang (Beijing, China) and Dr. Y. Ito (Bethesda, USA).

the scientific community involved in separation science. Yoichiro Ito, himself, and Walter Conway prepared useful books to make CCC known and used.²⁻⁵ A wealth of review articles, research articles, books, and book chapters have been published by Ito and many workers. An extensive database of more than 500 references, dealing with CCC, was prepared at the Brunel Institute of Bioengineering.⁶ It shows that this field is very active. So far, however, CCC has had only thematic sessions organized in major analytical or separation symposia, such as the Pittsburgh Conferences or HPLC symposia. Since these sessions were paralleled by others, the attendance has been limited. At Pittcon 1999, Dr. Chou of the Pharma-Tech Research Corporation (Baltimore, MD, USA) proposed to Dr Sutherland (Brunel Institute) to organize a symposium entirely dedicated to CCC. The concept of CCC 2000 in London was born. We report here the major facts and figures of this important event.

CCC 2000 IN FIGURES

Attendance

About a hundred scientists attended the symposium, coming from all over the world. Figure 2 shows the number of people versus their countries. Great Britain, the organizing country was the most represented nation. France, the U.S., and China were the next three most represented nations. People came from as far as from almost the antipodes of Europe (Brazil, Australia or Japan).

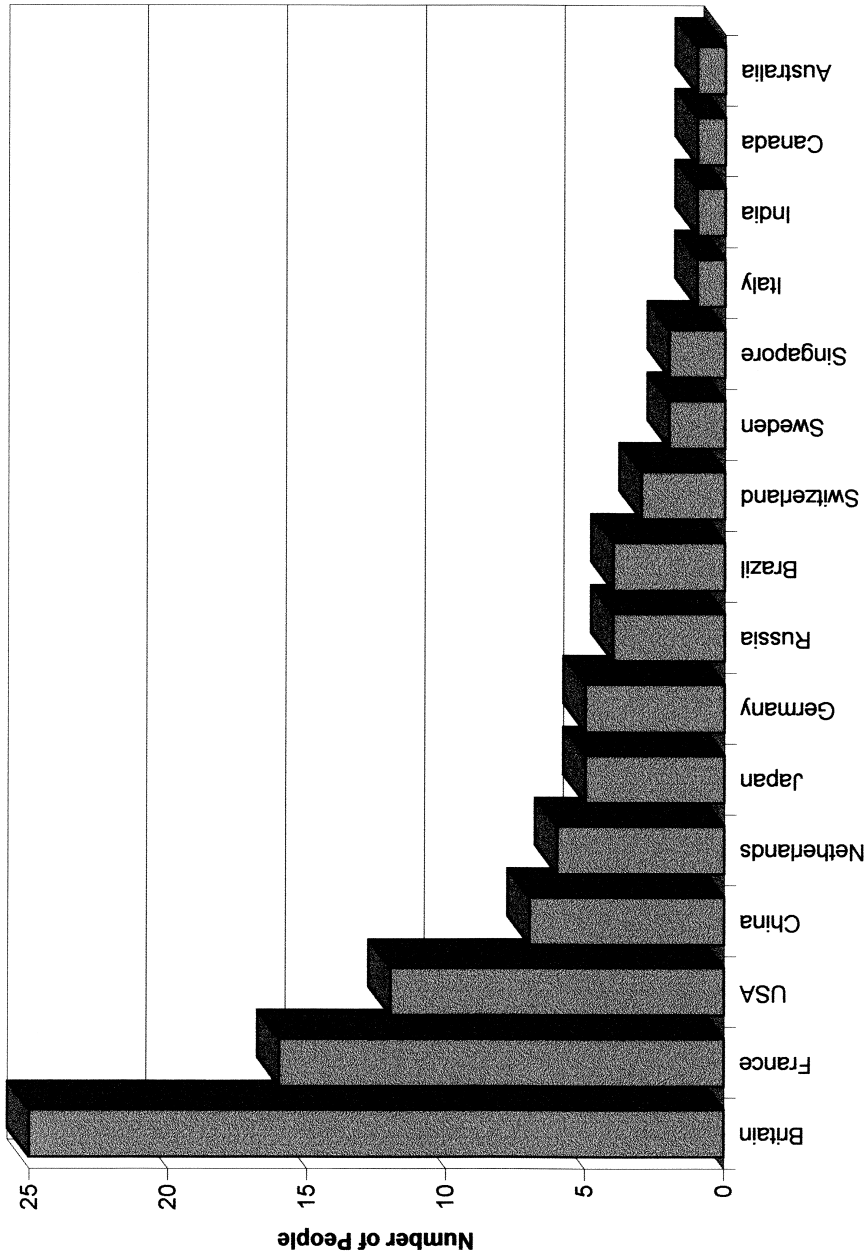


Figure 2. International diversity at CCC 2000, London.

Table 1. Subjects and Chairmen of the CCC 2000 Sessions

Session	Subject	Chairman
1	Basic	Y. Ito
2	Bioassay and natural products	T.Y. Zhang
3	Methodology	W. Conway
4	Antibiotics	G. Lye
5	Centrifugal Partition Chrom.	A. Foucault
6	General applications	K. Hostettmann
7	Scale-up and preparative	R. Margraff
8	pH Zone refining	Y. Ma
9	Theory	A. Berthod
10	Peptides and natural products	A. Marston
11	Proteins	I. Sutherland
12	Advanced use of CCC	E. Chou

Scientific Content

Table 1 lists the subjects and chairmen of the 12 sessions organized in series during the four days, September 11 to 14, of the symposium.

Sixteen keynote lectures and 25 oral communications were given during the 12 sessions. Twenty-five posters were displayed during the entire symposium. They were orally presented, in five minutes before the poster session held during the lunch and evening breaks.

Technical Exposition

Three companies exhibited their products at CCC 2000. The American Pharma Tech Research Corporation, the main sponsor of the symposium, exposed a three-bobbin coil planet centrifuge, Model CCC-3000, capable of fast rotation (2000 rpm) with a low volume.

The British Brunel Institute of Bioengineering (Uxbridge, UK) displayed a specimen of the second generation of multi-volume coil planet centrifuge machines, the *Brunel CCC* machine, whose first release was called *Quattro*. The French SEAB Company (Villejuif, France) presented, for the first time, two systems of its new hydrostatic silent machine with a variable volume, the *Kromaton CPC* (Figure 4).

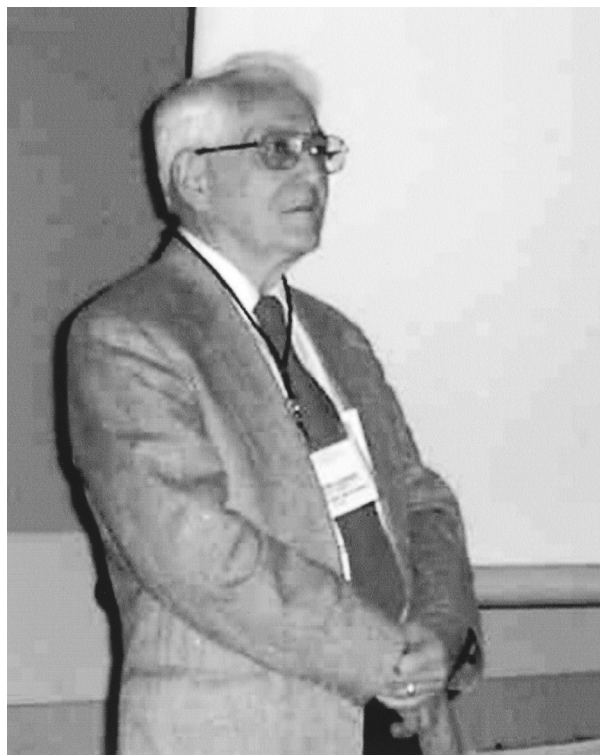


Figure 3. Walter Conway giving his talk.

SCIENTIFIC AND SOCIAL EVENTS

Scientific Exchanges

CCC 2000 was very intense in scientific exchanges between CCC users. Many attendants never had the opportunity or the finances available to attend the CCC sessions organized previously during the major analytical symposia. It was the first time they all could meet together. Very rich discussions took place between people involved in natural products isolation, originating from Switzerland, the U.S., Japan, and China. People interested in the improvement and understanding of the technique, representing the United Kingdom, France, Russia, and the Netherlands, discussed, passionately, several fundamental points on biphasic liquid systems, liquid retention and circulation and coiling spools or bobbins.



Figure 4. Dr. Chou of the Pharma Tech Company is very interested by the Kromaton CPC.

English was the language of the conferences, but it was common to hear many other languages during the breaks and poster sessions. The outstanding French delegation (Figure 5) was prompt to speak French whenever possible. Chinese, German, Japanese, Russian, and even Portuguese, spoken by the Brazilian delegation, was heard, as well, in the rooms.

Social Events

Highly interesting visits were organized within the CCC 2000 symposium. A tour of the Advanced Centre for Biochemical Engineering of the University College of London was directed by Dr. G. Lye. Dr. I. Sutherland organized the visits of the “Load of Hay” and the “Shovel” pubs, demonstrating how to use their product. The Symposium dinner took place on the conference site at Brunel



Figure 5. The French team. The right-most person is Ian Sutherland, adopted as a member because he was ubiquitous!



Figure 6. Dr. Y. Ito receiving the CCC award from Dr. I. Sutherland.



Figure 7. Dr. A. Marston receiving a gift for his keynote lecture from Dr. I. Sutherland.

University. Almost all the conferees attended. Dr. Sutherland honored the founder of the CCC technique, Dr. Yoichiro Ito, presenting him an engraved glass globe symbolizing the spreading of CCC all over the world (Figure 6). All keynote lecturers received a gift to thank them for their contributions (Figure 7).

The Symposium provided a good opportunity to visit the big city of London. A tour to the London Eye was the occasion to ride the Ferris wheel. A second group went to visit the Windsor Castle. Visiting Trafalgar square, the French complained that the statue of Napoleon was placed too high. Fortunately, his typical hat is easy to recognize (Figure 8)!

CONCLUSION

CCC 2000, the first international symposium entirely dedicated to the CCC technique was an extremely successful and enriching conference. Those attending the conference were reluctant to depart before scheduling another venue of this event. After some discussion, the international committee agreed on the candidacy of Dr. T.Y. Zhang and the Beijing Institute of New Technology



Figure 8. Trafalgar Square and the Admiral Nelson statue in downtown London.

Application. CCC 2002 will be chaired by Dr. T.Y. Zhang and organized in April 2002 in Beijing, China.

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