

41. COMMISSION DE L'HISTOIRE DE L'ASTRONOMIE

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INTRODUCTION

In the first place we express our deep regret at the decease of the following members of our Commission: Professor A. Pannekoek (the Netherlands), Professor O. Seydl (Czechoslovakia) and the former members Professor A. Dittrich (Czechoslovakia) and Sir Harold Spencer Jones (England).

In a circular letter addressed to members of the Commission, Presidents of the National Committees of Astronomy of countries adhering to the IAU, and to some other scientists interested in the history of astronomy it was said:

'In my opinion, the main task of our Commission is to bring to light all contributions of scientists in all countries to the treasure-house of science. In other words, to give a complete picture of the History of Astronomy in all epochs, beginning with the cosmological views of ancient peoples up to the present-day activities of astronomers and observatories all over the world.

'I should like to include in the Draft Report of the Commission not only an account of work done in the last three years, but also a characterization of knowledge of the History of Astronomy in different countries. I believe that such a survey would be considered useful and corresponding to the task of co-ordinating efforts on an international scale.

'Therefore I would ask you to send me not only your suggestions and data for the Draft Report, but also a short resumé of the investigations made in your country in the field of the History of Astronomy.'

My best thanks are due for the answers and recommendations from the following members of the Commission: A. Armitage, U. Baehr, H. Dingle, Miss A. V. Douglas, O. Fleckenstein, M. Kamienski, H. Michel, J. Pelseneer, V. L. Tchenakal, K. Yabuuti, E. Zinner; and also from K. Ferrari d'Occhieppo (Austria), D. S. Evans (South Africa), Ch. Gasteyer (U.S.A.), A. R. Hogg (Australia), H. C. King (England), D. Kotsakis (Greece), M. W. Makenson (U.S.A.), B. Lindblad (Sweden), D. J. de Solla Price (U.S.A.), T. Przykowski (Poland), R. O. Redman (England), S. Rosseland (Norway), E. Rybka (Poland), O. Struve (U.S.A.), B. Suchodolski (Poland).

The President of the Commission with the consent and kind assistance of the General Secretary has attempted to realize the compilation of the history of the Union for the 40 years of its existence, for publication as a separate book. The late Professor F. J. M. Stratton consented to be the author of this small book. Later on our eyes were hopefully directed to Sir Harold Spencer Jones, but, alas, his untimely death ruined these hopes. The task is still waiting for a worthy author. The President has suggested the organization, during the Berkeley Assembly, of an exhibition devoted to the history of astronomy. Each country could exhibit its most remarkable and important historical documents. This suggestion was approved by the General Secretary, and Dr John G. Phillips, Department of Astronomy, University of California,

Berkeley, California is charged by the U.S. Organizing Committee to assist in the organization of such exhibition.

GENERAL

The report is followed by the bibliography, prepared from the above answers and with data drawn from the literature. The list is, of course, incomplete, because some papers have appeared in inaccessible journals. The bibliography does not include obituaries, jubilee papers and personalia, or popular sketches, not containing original matter. Some papers of former years have also been included.

Ch. Gasteyer (U.S.A.) draws our attention to the critical bibliographies on the history of sciences in *Isis*. This bibliography is to our regret far from complete. The acceptance of recommendation no. 3 will probably provide, in future, more complete information about studies in different countries.

From the books published within the last three years, I particularly draw attention to the book by Professor N. V. E. Nordenmark 'History of astronomy in Sweden until 1800', Uppsala, 1959 (in Swedish), which is, in my view, a beautiful example of a survey of the history of astronomy in a country. Our task would be much easier if in all countries there would appear such surveys. It is also my particular wish to give special notice to the monograph by J. G. Perel 'Evolution of the ideas on the Universe' (in Russian), giving a wide and philosophically-deep general survey of the history of astronomy. This book is being translated into Japanese.

Prior to the consideration of the bibliographic data and the content of letters, I should like to point out that, independently of the IAU there exist the International Academy for the History of Science and the International Union for the History and Philosophy of Science, both of which include the history of astronomy in the programmes of their assemblies. Thus, for example, at the ninth International Congress of the History of Science in Barcelona in September 1959, nine reports of astronomical interest were presented as follows:

P. Collinder (Sweden): 'On the earliest measurements of Sun's distance',

C. Dorris Hellman (U.S.A.): 'The New Star of 1572',

Ho Peng-Yore (Malaya): 'Some errors in the Catalogues of ancient and medieval Chinese cometary observations',

Shigeru Nakayama (U.S.A.): 'Kenkon Bensetsu by Christovao Ferreira and Makai Genscho (c.1650)—the first treatise in Japanese on western cosmology',

E. Rosen (U.S.A.): 'Copernicus was not a priest',

A. Sayili (Turkey): 'A letter by al-Kashi on Ulugh Bey's Scientific Circle in Samarkand',

W. D. Stahlman (U.S.A.): 'Ptolemy's Handy Tables',

K. Yabuuti (Japan): 'On the development of Astronomy in Ancient China',

M. W. Burke-Gaffney (Canada): 'The chair of Hydrography at Quebec: 1651-1759'.

A general view of the extent to which the history of astronomy, from ancient times to our own day, is being studied is shown by the following brief review.

The studies by O. Neugebauer, B. L. van der Waerden, H. Bernier and some other investigators have considerably enlarged our knowledge of the ancient astronomy of Assyria, Babylon, Egypt and Greece. Valuable investigations into the astronomy of the European Middle Ages are constantly appearing. Very much was done in the U.S.S.R., in particular, on the study of the Middle Ages in the East; the scientists of China and Japan are studying the history of ancient astronomy in the Far East.

Many studies are devoted to the history of astronomy in particular countries as, for instance,

in England (the Newton and Halley epoch, in particular), Germany, Holland, Denmark (Tycho Brahe, Roemer), Italy (the Galileo epoch, in particular), China (there is being published a new general survey of the development of astronomy, by a number of investigators), the U.S.A., France, Czechoslovakia (the compilation and publication of the album on the history of national astronomy is specially mentioned), Yugoslavia (Boskovitch, Palitch), Japan (particular attention is to be paid to J. Mizumoto's monograph 'The history of astronomy in Japan for the recent 100 years'; the book by Simamura on the general history of astronomy; the 'History of Japanese astronomy before Meji restoration' which is in preparation), the U.S.S.R. (I underline the issue of the collection of papers 'Studies on the History of Astronomy', the issue of 'Astronomy in the U.S.S.R. for 40 years' with a complete bibliography of Soviet astronomical literature and the 'Surveys on the history of astronomy in the U.S.S.R.' by B. A. Vorontsov-Velyaminov).

However, there are many countries, even members of the IAU, the history of astronomy of which, including the history of recent times, is poorly reflected in the literature. Most regretfully, some valuable archives (as for instance of the Greenwich observatory, the Vatican, in Austria and elsewhere) are yet insufficiently studied. Special efforts are needed in some countries to organize studies on the history of astronomy, especially of their own astronomy.

Most fortunately, a number of eminent investigators in the history of instruments (H. v. Bertele, H. C. King, H. Michel, D. Price, T. Przykowski, V. L. Tchenakal, E. Zinner, etc.) have to a considerable extent restored for us the history of the evolution of astronomical instruments. Particular mention is due to the two volumes of 'Inventory of ancient scientific instruments displayed in four towns in Belgium' and the compilation of an all-world inventory of instruments of significance for the history of science. This undertaking must be assisted by the astronomers of all countries. In addition to the bibliography, where only the Japanese, Polish and Soviet studies are given separately, information about the principal studies in some countries is given below. To our regret, no answers have been obtained from many persons; and others replied that no studies on the history of astronomy are being made in their countries.

REPORTS FROM SOME COUNTRIES

Austria. K. Ferrari d'Occhieppo points out that there is neither Institute nor Commission charged with studies on the history of astronomy. However, a number of astronomers are interested in this branch of knowledge and many historians, ethnologists and historians of the arts desire to be placed in contact with specialists in the history of astronomy. In Austria there exists a rich collection of ancient manuscripts and monographs, and also of instruments, waiting to be studied.

Finland. G. Järnefelt published a short summary on the history of astronomy in Finland. It will also appear in Russian in the 'Studies in the history of astronomy' and deserves, of course, to be translated into other languages.

Greece. D. Kotsakis writes: 'For the last twenty years there has been a special endeavour among Greek astronomers and other scientists to investigate various questions in the realm of the History of Astronomy. A special investigation has been carried out in respect of the Byzantine period (330-1453) . . . M. Stephanides, S. Plakidis and D. Kotsakis have, moreover, proved . . . that the Byzantine period was a continuation of the classical Greek and Alexandrian periods. During the Byzantine period mathematical sciences, as well as astronomy were cultivated to some extent. Astronomy thrived particularly during the three last centuries (XIII-XVth)'.

S. M. Plakidis published a short description of the progress of astronomy in Greece during the recent century.

Poland. The Commission of the History of Astronomy of the Polish Academy of Sciences (already existing for 5 years under the presidency of E. Rybka) is creating an extensive collective study—the history of Astronomy of Poland up to 1945; A. Birkenmajer has published a short working plan of this monograph. E. Rybka is preparing for the 600th anniversary of the Krakow University the history of astronomy in Krakow.

T. Przyrkowski in Jedrzejow continues to replenish his family gnomonic collection and library, started by Jan Jozef Przyrkowski (1707–58), professor of astronomy in Krakow since 1738. T. Przyrkowski writes: ‘The collections are composed of more than 300 exhibits . . . sundials, moonials, stardials and ancient astronomical instruments and their models. The library numbers several thousand books in this field . . . : old prints with all basic items of the XVI–XVIIIth centuries and the first prints of Copernicus, Galileo, Kepler, Tycho Brahe, Hevelius (with autographs), Lubieniecki and the most important gnomonic library in the world’. T. Przyrkowski is preparing a detailed description of this unique collection for publication.

M. Kamienski continues his interesting studies of the early appearances of Halley’s comet.

Sweden. B. Lindblad mentions: ‘There is a very considerable interest in the History of Science in Sweden including the History of Astronomy. Important contributions in this field have been given under the auspices of the Swedish Academy of Sciences in Stockholm. Several of these publications concern also the development in Astronomy. In recent decades a very important activity centres in the Swedish History of Science Society at Uppsala founded by Professor J. Nordström. The famous Annual of the Society, ‘Lychnos’, edited by the Society gives outstanding contributions to the History of Science with extensive reviews of international literature on the subject.

‘Concerning the History of Astronomy, the Nestor of Swedish astronomers, N. V. E. Nordenmark, has an outstanding position with his many contributions distributed over a great many years. The late Professor K. Lundmark, former Director of the Lund Observatory, had a very great interest in the History of Astronomy and made a great number of contributions in this field. He founded a small society at Lund for the study of the History of Astronomy’.

U.S.A. Ch. Gasteyer writes: ‘Americans are interested in the history of astronomy in almost every age of history and in many countries’. Indeed, a wide-ranged spectrum of the interests of American investigators is seen from the bibliography. Attention should also be paid to a number of brilliant papers by O. Struve, J. Ashbrook and others, which appeared in *Sky and Telescope* and to the interesting historical data in a number of *Leaflets* of the Astronomical Society of the Pacific.

U.S.S.R. The Commission of the History of Astronomy of the U.S.S.R. Academy of Sciences continues its organisational activity and the publication of the ‘Studies on the History of Astronomy’. The sections on the History of Astronomy of the two broad conferences devoted to the history of science in 1959 and 1960 have been working under its guidance. The activity of the Commission is reflected in the reports in the ‘Astronomical Journal, Moscow’ and the paper by P. Kulikovskiy in ‘Studies on the History of Astronomy’ no. 6. Preparations are being made in the U.S.S.R. for the celebration of the 250th anniversary of the birth of the great Russian scientist and poet M. V. Lomonosov and the 200th anniversary of his discovery of the atmosphere of Venus.

RECOMMENDATIONS

E. Rybka (Poland) recommends the organization of a compilation of the critical systematic history of astronomy.

Ch. Gasteyer (U.S.A.) draws attention to the unexplored branches of the history, the development of which requires the attention of eminent and expert astronomers, as, for example: celestial mechanics, astro-spectroscopy, etc.

M. Kamienski (Poland) recommends the completion of the processing of the observations of Halley's comet of 1909–11 undertaken by the late J. Bobone. The knowledge of the orbit of this comet must be improved, in order to be able to plumb the depths of the ages and to rectify the chronology of ancient history.

J. Pelseneer (Belgium) thinks that 'it would be most interesting to include in the activity of Commission 41 consideration of astronomy (ideas and facts) among those peoples, whom it is the custom to call primitive, or under-developed (in the 18th century: *les sauvages*)'. In connection with this suggestion, note the paper by E. Fettweis in the bibliography.

J. O. Fleckenstein (Switzerland) notes that, in the collections of works by Schiaparelli, studies on the history of astronomy and his scientific correspondence are absent. He recommends that the Commission assist the organization of the publication of the *complete* collections of the classics in astronomy, and also international collaboration in the publication of complete collections of the works of scientists whose activity was in two or more countries, as, for instance, Roger Boscovich.

H. Michel (Belgium) underlines the annoying cases of duplicate activity—the study of the large letter by the astronomer Ghiyâth al Din of Samarkand, which was made by Kennedy in Beirut and Aydin Sayiti in Ankara; the preparation of the monograph on astrolabes by himself in Brussels and Garcia Franco in Madrid. He recommends that information on studies in progress be organized so as to avoid duplicate studies, and to permit full collaboration in the development of a subject.

He also emphasises that our purpose is not only to reveal and enumerate the facts—discoveries and the progress of science in different epochs—but to reveal the tendency of its evolution. For this purpose it is necessary to recapture the way of thinking of our predecessors; only then can we worthily evaluate their work.

O. Struve (U.S.A.) writes: 'I should like to suggest that within the framework of our Commission several national committees be formed in order to conduct historical studies somewhat along the lines which you have adopted in the Soviet Union,' and further on 'It would be of great interest if the Commission would undertake the preparation of several monographs devoted to particular aspects of the history of astronomy in several countries, and if it could, as a first step, prepare lists of the available literature that could be distributed to all members of the Commission and other interested persons'.

I should like to summarize the above in the form of draft resolutions for the eleventh General Assembly in Berkeley.

1. To recommend that the National Committees of Astronomy in the countries adhering to the IAU organize commissions on the History of Astronomy, to co-ordinate the efforts of scientists of different specialities by attracting them as members.
2. To extend Commission 41, by including in it according to the suggestions of the National Committees, the Presidents of the National Commissions on the history of Astronomy.
3. To request Commission 41 to organize the preparation and issue of mimeograms of the annual bibliography of studies in the history of astronomy and their distribution to members of the Commission, to National Committees, and to observatories and individual scientists interested in the history of astronomy. This would make it unnecessary to publish the bibliography in the report.

4. To request Commission 41 to organize the exchange of information by publishing and distributing under the auspices of the IAU, an Information Circular (several numbers a year).

I hope that the acceptance of these recommendations will facilitate the solution of many other problems.

P. G. KULIKOVSKY
President of the Commission

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