

Commission 28. (NÉBULEUSES ET AMAS STELLAIRES.)

In the absence of the President, Dr E. Hubble took the chair. Dr Knox-Shaw acted as Secretary.

The Commission had two meetings, and the following members of the Commission attended: Mme Roberts and Messrs Bigourdan, Hubble, Knox-Shaw, Lampland, Lundmark, Madwar, Parvulesco, Reynolds, Wright. Several visitors also took part in the discussions.

The President's Draft Report was adopted with one slight alteration. The Chairman expressed the opinion that the question of a new catalogue should be postponed until further progress had been made with the survey of nebulae, and suggested the following recommendations:

(a) That the President, or his deputy, invite observers equipped with suitable instruments to participate in the survey and use his good offices to adjust the selection of zones by mutual agreement.

(b) That an attempt be made to include individual nebulae down to photographic magnitude 14.0 (estimated at about 2000), and statistical data on the fainter nebulae.

(c) That the observations within a given zone be as homogeneous as reasonably possible, and that provision be made for the inter-comparison of zones.

(d) That the various observers first use their own data in their own way, but eventually send them, together with such sample plates, or copies, of the nebulae as may be necessary, to a central bureau (a Sub-Committee to be appointed by the President) for co-ordination and cataloguing.

After a short discussion these recommendations were approved, and the hope was expressed that by the time of the next meeting of the Union it would be possible to commence detailed consideration of the catalogue.

Dr Hubble also thought that decision on the exact scheme of classification of the nebulae to be used in the catalogue had better await the completion of the survey, but that a certain measure of accord on this point, which he expressed in the following resolution, was now possible:

"The Commission recognizes the fundamental distinction between Galactic and Extra-Galactic nebulae and the further division of the Galactic nebulae into Diffuse and Planetary. Among the brightest Extra-Galactic nebulae it is recognized that there are spiral and non-spiral forms, but the detailed classification is still under discussion and should be deferred for the present."

This was agreed to.

With regard to proposal (*m*) referred to the Commission by the General Assembly, the following resolution was carried:

"The Commission, believing that this important work is being conducted with commendable despatch, recommends that the resolution be not adopted, as being unnecessary."

Mme Roberts presented to the Chairman of the Commission a copy of the Atlas she had prepared from the photographs of the late Dr Isaac Roberts to illustrate Herschel's 52 Nebulous Regions. Dr Hubble, in expressing his thanks for this valuable gift and his appreciation of the skill and care which had been put into the production of the Atlas, read a letter from Father Hagen on the subject.

At the second meeting of the Commission Dr Lundmark gave an account of the

card catalogue he was compiling of the known data on nebulae. The Commission's appreciation of this work was expressed in the following resolution:

"The Commission, considering it important that the existing observations on nebulae and clusters should be put in a form that is more readily available, welcomes the compilation of such data likely to be of interest to investigators, and hopes that Dr Lundmark will be able to complete the work of this kind on which he is now engaged."

A discussion took place on the question, referred to in the President's report as having been raised by Dr Curtis, of the determination of accurate positions of extra-galactic nebulae as reference points for the systematic motions of the faint stars.

No formal conclusion was come to, but various difficulties likely to be met with were pointed out and it was agreed that the Commission should recommend suitable nebulae to anyone desiring to make measurements.

Dr Parvulesco made some suggestions as to the main divisions of the proposed new photographic catalogue of nebulae and clusters, which were agreed to in principle.

Recognizing that the problems affecting clusters are quite different from those of the nebulae it was agreed to ask the President to appoint a Sub-Committee to deal with clusters.

Commission 29. (CLASSIFICATION SPECTRALE.)

Acting Chairman, Professor H. N. Russell; Secretary, Dr W. J. Luyten.

After the opening address of the Acting Chairman the following resolution was introduced by Professor Shapley, acting also on behalf of Mr H. H. Plaskett:

"It is recommended that the scope of the Commission be enlarged to include spectral photometry, and that the name of the Commission consequently be changed to the Commission for (detailed) Analysis and Classification of Stellar Spectra."

After discussion, in which Professor Newall and Mr Wright took part, the proposal was amended to read "Commission on Stellar Spectra".

The Chairman read a suggested alteration in the Report received from Harvard too late for printing or even circulation.

Mr Wright advocated the postponement of consideration of this motion and objected to immediate voting, because it was too important a change.

In the discussion, Professor Newall, Dr Plaskett, Professor Shapley, Professor Russell and Mr Wright took part.

The Chairman asked for a vote: there were 4 votes for postponement and 4 against.

Giving the decisive vote, the Chairman decided for postponement, since no harm could result therefrom.

The Report was then taken up in detail, and when, no objections having been raised, the paragraph "Stars of type O" (p. 163) was reached, the recommendations on p. 167 were included in the discussion.

Recommendation 1 was carried unanimously.

Objections were raised by Messrs Wright and Newall to the words "of hydrogen, and in some cases of metals" in Recommendation 2, since they wished the meaning of the symbol ϵ to be quite general.