(8) When the number of masses is three we can readily reduce these forms to those given in the enunciation.

It is at once seen that the fact that the μ_1, μ_2 in this are arbitrary depends only on the accuracy of the step (4). The other steps, though it has seemed necessary to give them for the sake of clearness, are familiar. But the whole may perhaps serve the purpose of showing how the equations of motion of three bodies may be obtained in a clearer manner than in many of the books.

A New Cometary Meteor Shower (1926 *October* 9).

By W. F. Denning.

An unusual number of large meteoric fireballs appeared in the months of September and October this year. One was observed on October 9 at 22^h 16^m G.M.T. which gave a brilliant illumination of the sky and left a streak remaining visible to the eye for about thirty minutes, during which time it underwent curious changes of form and exhibited a considerable drift amongst the stars.

As soon as satisfactory observations of the meteor came to hand it became evident that its radiant was situated in Draco and that it agreed very nearly with the radiant and date computed for Giacobini's comet of 1900, which has a period of about six and a half years and is due at perihelion on 1926 December 11. There were 53 observations of the meteor, but not more than one-third were found available for ascertaining the radiant-point, which was found to be at $262°+55°$ both by myself and Mr. King. The height was 67 to 24 miles, path 67 miles, and velocity about 18 miles per second, but the latter value is uncertain.

Mr. J. P. M. Prentice, at Stowmarket, was watching for meteors on October 9, and between 20^h 20^m and 23^h 20^m G.M.T. saw 36, of which 16 conformed with a radiant at $263°+54°$ having a diffusion of six degrees. The meteors were slow. The shower was decidedly one of unusual character, for its activity far surpassed that of the normal streams which are so abundantly distributed over the firmament. Though the night was magnificently clear, a high wind prevailed and proved rather embarrassing. Mr. Prentice thought that the hourly number of meteors visible would have been fully 17 had attention been directed uninterruptedly to the sky.

The Rev. M. Davidson, writing in the *B.A.A. Journal* for 1915 April, pointed out that the comet of Giacobini (1900) passed near the earth on October 10 and might be expected to originate a meteor shower. In a subsequent number of the *Journal* I mentioned that a number of meteors had been recorded at Bristol having a radiant at $267°+49°$ during the first half of October. The accordance was not, however, of convincing character.

In 1920 October 6–9 I find that I saw five slow meteors giving a radiant $268°+53°$, which may have belonged to the comet though it

must have passed through perihelion in the previous spring. In the *Monthly Notices* for 1920 Mr. Davidson gave the computed radiant as at 251°·5+55°·9 for October 9, and the distance from the earth's orbit as $5\frac{1}{2}$ millions of miles. Dr. A. C. D. Crommelin recently pointed out that, from the elements of the comet given for the present return, the two orbits actually intersect and that the radiant would be at about 265°+54°, October 10, the R.A. being uncertain to several degrees. The Rev. M. Davidson has since made another investigation and finds that intersection occurred in accordance with Dr. Crommelin's results, and that his own computation placed the radiant at 261°+53°·5. Both in date and position, therefore, the radiants derived from the comet, fireball, and meteoric showers agree quite as closely as the nature of the observations permit, and leave little, if any, doubt as to the identity of the comet with the meteoric display of October 9 last. It seems to be another case of Pons-Winnecke and supplies an additional instance of the orbit of a periodical comet being drawn by perturbations into closer touch with the earth.

A comparison of the various positions is as follows :—

		Radiant.
Dr. A. C. D. Crommelin	Comet	265°+54° (approx.)
Rev. M. Davidson	,,	261+53·5
J. P. M. Prentice	Shower, Oct. 9	263+54
A. King and W. F. D.	Fireball ,,	262+55

Mr. King at Ashby, Lincs, and myself at Bristol were making observations on the early evening of October 9, and five of the meteors we saw were directed from a radiant in Draco at about 255°+56°. Four of the meteors were bright and equal 1st mag. or 1. A meteor which I saw at $20^h\ 20^m$ on the same night was equal to Venus, moved slowly, left a bright streak, and may have been another member of the same stream, but its direction was from a region lying about 10° or 12° S. of the Draconid radiant, and I doubt whether it should be included. It is certain, however, that this cometary shower exhibits, like similar systems connected with Biela's and Pons-Winnecke's comets, a diffuse radiant. It appears that the recent Draconid shower of October 9 was not rich in the early evening, but that its intensity increased after $20^h\ 30^m$ G.M.T.

A special feature of these cometary Draconids, and one which may serve to identify them, is the dense and sometimes durable streaks or trails which the brighter ones leave in their paths. In several instances I noted this particularly, for it is an unusual incident to find slow-moving meteors with durable trails. They leave spark-trains like the Andromedids, which, however, are quickly dissipated. Mr. Prentice saw 5 bright Draconids on October 9 (including the large fireball), and 4 of these he describes as exhibiting thick trails, several persisting for longer periods than usual.

Mr. G. Shajn (*Monthly Notices*, **83**, 343) says that the radiants of meteors from periodical comets, like the Andromedids of November,

will display very considerable and increasing diffusion until their disappearance. This conclusion accords with observation, and several of the other views he has expressed seem equally well-supported on good evidence.

Large fireballs appeared in September and October this year, as under:

1926	G.M.T. h m	Mag.	Radiant. ° °	Notes.	Obs.
Sept. 6	20 45	☽	62+38	Detonating, ε Perseid, Great Yorkshire fireball.	273
15	22 59	☽	150+40 140+39	Streak 15 minutes.	5
17	19 49	☽	89+41 98+43	Very long path, 520 miles.	5
18	19 1	> ♀	235+55	A September Quadrantid.	3
20	19 2	½ ☽	74+42	Long path, 320 miles.	4
Oct. 2	19 25½	= ☽	305−10	Detonating, α Capricornid.	40
9	22 16	2× ♀	262+55	Streak 30 minutes, Draconid.	35
22	22 50	> ♀	41+20 33+19	Arietid.	3

About 20 others were reported but insufficiently observed for their real paths to be determined.

Bristol:
1926 *November* 10.

Sixth Note on W. Herschel's Extensive Nebulous Fields.

By J. G. Hagen, S.J., Assoc.R.A.S.

The present set of eleven Herschel fields completes the systematic examination of his fifty-two extensive nebulosities. Among them only one more was found, in addition to the five enumerated in the Fourth Note, p. 553, where the presence of nebulous matter is directly proved by photography, viz. No. 46.

1. Table I. is constructed like those in the preceding five notes, except that the Guiding Stars are denoted by their Bonn *DM* numbers. These numbers will be more convenient for identifying the stars on the *DM* charts. The $\Delta\alpha$ and $\Delta\delta$ will locate the Guiding Star relative to the centre of Herschel's field, as in the former notes. No. 42*a* is Herschel's field as distinguished from 42*b* proposed by I. Roberts to put it " in sequence " with the other fields.

In Table II. the extension of the nebulosities along the Parallel and the Meridian is again counted from Herschel's centre, although it is not certain that it was always meant by him to be symmetrical with the place assigned. As in the preceding fields, no definite limit of these nebulosities was found either by Herschel or by the writer.