

NEW FORMS OF TELESCOPES.

and other optical instruments

To the Editor of

Sir,

There have recently appeared in the newspaper and scientific press communications dealing with a new form of telescope ~~combining the optical principles of reflectors and refractors in such a way as to secure cheap, achromatic instruments of about half the usual focal length.~~

It has recently been announced that Professor Schupmann, of the Technische Hoch Schule at Aix la Chappelle in Prussia, has in the United States, under Letters Patent No. 620978, dated March 14th, 1899, patented such an instrument as is above described, under the name of "Medial-Fernrohr," ~~and that the combination used is equally applicable in the case of microscopes and photographic cameras.~~ Among other things, it is claimed that one of the advantages of the telescope is that single crown glass lenses alone may be used.

Under the circumstances, and in defence of the interests of two of its members, Messrs. Z.M. and J.R. Collins, The Astronomical and Physical Society of Toronto thinks it proper to intervene, for the purpose of laying before your readers certain facts not hitherto

achromatism

The fundamental principle of which consists in the combination of a crown glass lens by the addition of a small concave lens of flint glass on the back. The substitution of the small concave lens with its internal reflecting surface as is in fact the case of the so-called "catoptric" telescope, the combination of a crown glass lens with a small concave lens of flint glass in a manner that has not been attained in a refractor, at the same time at a much less cost and a shorter tube.

on July 30/97 applied for a

Ref. Schupmann, it is also announced published a book on the subject

published, and which may tend to place the alleged new invention in a different light.

In 1893, the Messrs. Collins ~~invented and pat-~~
~~ented~~ ^{constructed} a Telemeter. As a further result of their studies,
they came to the conclusion that ~~the~~ ^{certain} principle employed
in their Telemeter might be advantageously used in a
telescope combining some of the properties of a re-
fractor and a reflector. In the summer of 1896, they
~~constructed~~ ^{completed} and exhibited ~~privately~~ to a few friends
~~and a number of members of this Society~~
an ~~four-inch~~ instrument which they called the "Mono-
Plane ^{Aberrator} Telescope." This instrument performed admirably,
~~and seemed to be so satisfactory that a couple of~~
~~friends offered to join them in patenting it and plac-~~
~~ing it upon the market.~~ On the suggestion of the Messrs.
Collins, ~~however, who felt that the invention would be re-~~
~~ceived with more confidence if they were able to secure~~
~~the approval for it of well-known scientific men, highly~~
confidential communications were, in the spring of 1897,
addressed to Lord Kelvin, and to Professor J.A. Brashear,
of Allegheny, Pa., and Dr. H.C. Vogel, Potsdam, Prussia. To
these gentlemen were also submitted drawings as well as
descriptions of the ~~invention.~~ ^{particulars of the monoplane combination} On the date before him,
Lord Kelvin declined, however, to express a conclusive
opinion; Professor Brashear, while not committing himself
to the principle involved, suggested that an eight-inch
telescope of high quality should be constructed add

*a new design, in
which a modified form of
diaphragm objective was
used for the purpose of
shortening the tube and
multiplying the focus*

*of 4" aperture, 2 ft in length
with 4 ft focus*

*ph. etc. [unclear]
of Allegheny Pa.*

[unclear]

tested. In his first communication, Dr. Vogel, who stated that he had shown the invention to his assistants, unsparingly condemned the telescope. But after a letter explaining to him, ~~certain points which he had apparently misconceived, he stated that it appeared to have many merits. As a result, the Messrs. Collins ordered, in Rochester, N.Y., the necessary lenses, but, for reasons which need not be mentioned, one delay succeeded another, and it was only recently that it was found feasible to take the necessary steps towards patenting the device, the excellence of which had now received a practical demonstration.~~

The point which the Society wishes to make is that, so long ago as the ^{early part} ~~summer~~ of 1896, a telescope ~~embodying the essential features of~~ most precisely the same as that now described by Professor Schupmann, was constructed and tested in Toronto. In his annual address to the Society, delivered on the 12th of January, 1897, Mr. J.A. Patterson, M.A., President, referred to the instrument, and claimed for the Society the credit of having members sufficiently skilled in optics to produce a combination of lenses composed of one kind of glass, which could be used for telescopes, microscopes and cameras, greatly cheapening the cost and reducing the size of those instruments.

[Faint handwritten notes on the left margin, including:]
 the development of
 the invention
 the construction of
 the instrument
 the early part
 the summer of 1896
 the essential features of
 the same as that now described
 the Professor Schupmann
 the Society
 the credit of having members
 sufficiently skilled in
 optics to produce a combination
 of lenses composed of
 one kind of glass, which
 could be used for
 telescopes, microscopes
 and cameras, greatly
 cheapening the cost
 and reducing the size
 of those instruments.

It may be added that upon this subject the Society is preparing a special report which will include copies of the correspondence which passed between the Society and the parties referred to, and affidavits verifying the facts therein mentioned.

In justice to the Messrs. Collins, I am to ask you to be so good as to find room in your valuable paper for this communication.