

NEW FORMS OF TELESCOPES.

{Achromatism} *and other forms of 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~~ {The fundamental principle of which consists in attaining the achromatism of a large Object-Glass by the interposition of a small concavo-convex lens, silvered on the back. The curvatures of the small correcting negative lens with its internal reflecting surface being so proportioned as to cause its negative chromatism to destroy[?] the positive chromatism of the object glass in a more perfect manner than has yet been attained in a refractor; at the same time at a much less cost and ^{with} a shorter tube}.

It has recently been announced the Professor Schupmann, of the Technische Hoch Schule at Aix la Chapelle in Prussia {on July 30/97 applied for and} has in the United States, under Letter 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 {Prof Schupmann it is also announced ^{has} published a book on the subject}.

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

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

In 1893, the Messrs. Collins ~~invented and patented~~ ^{constructed} a Telemeter {of their own design, in which a modified form of dialyte objective was used for the purpose of shortening the tube and amplifying the focus}. As a further result of their studies, they came to the conclusion that ~~the~~ ^{certain} principles employed in their Telemeter might be advantageously used in a telescope combining some of the properties of a refractor and a reflector. In the summer of 1896, they ~~constructed~~ ^{completed} and exhibited ~~privately~~ ^{and a number of members of this Society} to a few friends ~~an four inch~~ ^{an} instrument {of 4ⁱⁿ aperture, 2 ft in length and 4 ft focus} which they called the "Monoplane ^{Achromatic} Telescope." This instrument performed admirably, ^{photographs being taken with it} and it seemed to be so satisfactory that a couple of friends offered to join them in patenting it and placing it upon the market. On the suggestion of the Messrs. Collins, however, who felt that the invention would be received 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 ^{fundamentals 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 and

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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., [this may have been Bausch & Lomb] ~~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.~~ [portions of this expunctuated passage may have been reinstated; there are also interlinear additions, and very faint marginal additions both in pencil which are difficult to construe].

The point which the Society wishes to make is that, so long ago as the ~~summer~~^{early part} of 1896, a telescope ~~almost precisely the same as~~^{embodying the structural practices of} 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 new 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.

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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.

Conventions of this transcription

- *text in red appears in that colour in the manuscript*
- *text contained within {these} brackets appears in the margins of the manuscript*
- *text in ^{superscript} is entered by hand between typewritten lines in the manuscript*

R.A. Rosenfeld