

three-screw turbines. Last summer, the Channel steamer *Paris*, fitted with geared turbines, attained the remarkable speed of 25.07 knots—a result which has only been surpassed by torpedo craft. Hydraulic transmission has lately been developed in Germany, and electrical transmission has also been applied to several vessels. Cargo steamers have advanced from 6400 to 9600 tons dead-weight, at practically constant speed of 11 knots. There are many attractive possibilities in the problem of producing a trustworthy internal-combustion engine able to compete successfully with the steam-engine and geared turbine.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES FOR NOVEMBER:—

- Nov. 1. 16h. om. Mercury at greatest elongation east of the Sun.
 2. 21h. 18m. Jupiter in conjunction with the Moon (Jupiter $4^{\circ} 35' N.$).
 4. 11h. 32m. Uranus in conjunction with the Moon (Uranus $3^{\circ} 26' N.$).
 5. 8h. om. Venus at greatest heliocentric latitude N.
 12. 13h. om. Mercury stationary.
 15. 12h. 25m. Saturn in conjunction with the Moon (Saturn $6^{\circ} 49' S.$).
 18. 7h. 6m. Mars in conjunction with the Moon (Mars $2^{\circ} 23' S.$).
 „ 13h. 21m. Neptune in conjunction with the Moon (Neptune $4^{\circ} 40' S.$).
 22. 18h. om. Mercury in inferior conjunction with the Sun.
 26. 7h. 33m. Venus in conjunction with the Moon (Venus $5^{\circ} 41' N.$).
 „ 23h. 32m. Mercury in conjunction with the Moon (Mercury $6^{\circ} 43' N.$).
 27. oh. om. Mars stationary.
 30. 16h. 5m. Jupiter in conjunction with the Moon (Jupiter $4^{\circ} 12' N.$).

A NEW COMET.—A Kiel telegram, dated October 24, distributes the information communicated by Prof. Hartwig that on October 23 Dr. Zinner discovered a comet of the 10th magnitude at 7h. 58.8m. M.T. Bamberg. Its position is given as R.A. 18h. 40m. 1s., and declination $-4^{\circ} 32' 38''$, and the object was observed to have a tail. The comet is thus situated in the constellation of Aquila, a little less than half-way between λ Aquilæ and η Serpentis.

COMET METCALF 1913b.—The following is the ephemeris for Metcalf's comet as calculated by Herr A. Kobold, and published in *Astronomische Nachrichten*, No. 4686:—

		12h. M.T. Berlin.						
		R.A. (true)		Dec. (true)	Mag.			
		h.	m.	s.				
Oct.	30	...	20	46	53	...	+4	25.8
	31	...	46	31	...	3	13.9	
Nov.	1	...	46	13	...	2	6.1	
	2	...	45	58	...	1	2.0	...
	3	...	45	47	...	+0	1.5	...
	4	...	45	39	...	-0	55.9	...
	5	...	45	33	...	1	50.1	...
	6	...	45	31	...	2	41.4	...

This faint comet is now just moving into the constellation of Aquarius, and is only a suitable object for telescopes of large aperture.

COMET WESTPHAL (1913d).—Comet Westphal is becoming a faint object, being now a little fainter than 8.5 magnitude. The following is a portion of

the ephemeris published by Hermann Kobold in *Astronomische Nachrichten*, No. 4687:—

		12h. M.T. Berlin.						
		R.A. (true)		Dec. (true)	Mag.			
		h.	m.	s.				
Oct.	30	...	20	40	35	...	+23	16.8
	31	...	39	38	...	23	53.8	...
Nov.	1	...	38	46	...	24	30.4	...
	2	...	37	56	...	25	6.5	...
	3	...	37	11	...	25	42.3	...
	4	...	36	30	...	26	17.7	...
	5	...	35	51	...	26	52.8	...
	6	...	35	17	...	27	27.5	...

The comet is moving in the constellation of Vulpecula, and is in a good position for observation.

ELEMENTS AND NUMBERS OF MINOR PLANETS.—The growth in the number of the minor planets discovered is clearly brought out in the two interesting communications by Dr. Cohn in *Astronomische Nachrichten*, No. 4688. In the first paper he refers to the elements and numbering of these bodies, and points out that in the interval, July 1, 1912, to June 30, 1913, sixty-seven objects have been given provisional numbers. Five of these have been identified as old members of the group. Of the sixty-two remaining, nineteen hail from Heidelberg, seven from Johannesburg, nine from Neuchâtel, eleven from Simeis, three from Vienna, and thirteen from Winchester. Of this number twenty-one have had their elliptical orbits checked and numbers assigned to them.

In the second communication Dr. Cohn points out the unsatisfactory state, and possibility of mistakes, in the present system of lettering the planets, owing to their great number, and suggests, with the help of other astronomers, a set of names for the planets from No. 570 to 727. As an example, it may be stated that 697 has been named "Galileo," as it was discovered on the day of the three hundredth anniversary of the discovery of Jupiter's satellites. 727 is termed "Nipponia," as the planet was discovered twice by Herr Hirayama in Tokio.

THEORETICAL ASTRONOMICAL RESEARCH.—A circular regarding a plan for an institute for theoretical astronomical research has reached us from Lund, Sweden. It is a timely plea for financial support for a neglected part of astronomy. The work suggested as specially suitable to be undertaken by the institute is in the first place the investigations of the orbits of the asteroids, work which it is confidently anticipated will lead to the solution of "the problem of three bodies," and perhaps also solve the enigma of the evolution of the heavenly bodies. This work would be undertaken by three of a proposed staff of eight "theoretical astronomers." Two more would work at the problem of three bodies; to another couple would be assigned various cosmological problems, such as the figure of the heavenly bodies, tides, and related problems. The remaining astronomer would be required to deal with stellar statistics. These men would be of the standing of university professors, and have rather better pay. Each astronomer would have one algebraical computer and two numerical computers at his personal disposal, and should the necessity arise additional computers would be available. The project is conceived in a princely manner, the proposed yearly budget being 200,000 marks (German) (10,000*l.*), and the complete scheme requires a capital sum of 5,600,000 marks (280,000*l.*). Calculating machines, worked by lady computers, would be employed for the numerical calculations, and no fewer than 100,000 marks (5000*l.*) is proposed to be spent on machines.