ent incommensurate rhythm ourselves, whether by movement, or inward time keeping. Helmholtz it is known explains discord by '*beats*,' harmony by their absence; and melody he explains by the 'affinity' of the consecutive notes, *i. e.*, the presence in them of identical over-tones. All these theories Dr. Lipps denies, to touch the essence of the matter; and reduces harmony, discord, and melody to the single positive principle of felt congruence or incongruence of vibratory rates. The paper is too technical to be gone into in more detail. All musical æstheticians should read it. It closes a little book, which, for acuteness, clearness and vigor, has not been surpassed for many a long year.

ASTRONOMICAL NOTES.

IT appears from the latest reports we have seen that the new star in the Andromeda nebula (31 Messier) to which attention was first generally called by Hartwig's telegram, was discovered independently by several observers, one at least antedating Dr. Hartwig. Dun Echt Circular No. 98 announces that it was seen by Mr. Isaac W. Ward on August 19, and by M. Lajoye at Rheims, August 30. Baron von Spiessen at Winkel, in Prussia, seems to have noticed it on the evening of August 30, about 9¼h., communicating his observation to Dr. Deichmüller by mail. On August 31, at 10h. 20m. Berlin mean time (before the arrival of Hartwig's telegram), Dr. Oppenheim turning his 3½ inch comet seeker upon the nebula, noticed the new star-like nucleus and estimated it to be between the 5th and 6th magnitude. The new star was also independently discovered by G. W. Middleton, at Mexbro' Common, England, on September 3. Hartwig telegraphed the peculiar appearance of the nebula from Dorpat at 10h. 15m., August 31. We have the testimony of different observers that the star was not there in the early part of August. Hartwig estimated it at 7th magnitude on August 31, Oppenheim making it 5th to 6th magnitude, and Lamp 7.4 magnitude on the same evening. On September 1, and for several days following, it was variously estimated from the 6th to 7th magnitude, and since that time it has gradually grown fainter, the latest estimate (by Mr. Skinner, with the transit circle of the naval observatory, September 30) making it of about 9½ magnitude. On September 2 it was reported visible to the naked eye. In color it was called red and orange during the first week in September, but it now appears nearly white. We learn from the *Athenaeum* that Mr. Maunder examined the star with the large spectroscope of the Greenwich observatory, describing the spectrum as of precisely the same character as that of the nebula, *i.e.*, it was perfectly continuous, no lines either bright or dark being visible, and the red end wanting, so that there is at present no evidence of any outburst of heated gas, as was the case with the star T Coronae in 1866, and Nova Cygni in 1876.

The Andromeda nebula, though probably composed of a great number of very small stars, has never been resolved. The spectroscope seems to show that it is not gaseous. Assuming that the nebula is stellar in nature, and that the 14th magnitude is the upper limit of any one of its component stars, then a rise from the 14th to the 7th magnitude indicates an increase in brightness of 631 fold, which renders it very improbable that the star is one of the constituent parts of the nebula. It seems rather more probable that it is a variable or new star which happens to be in line with the nebula as seen from the earth.

The following observations of the *Nova* were made with the transit-circle of the naval observatory, and, by permission of the superintendent, are herewith communicated. The estimates of magnitude are differential with respect to the star $W^2\ 0_h$, 969 which follows the *Nova* about 2m., and is assumed to be 9.0 mag. Photometric observations of this star would be desirable:

Date. 1885.	Observer.	Magnitude.	1885.0					
			α			δ		
			h.	m.	s.	°	′	″
Sept. 17	W.	9.1	0	36	26.86	+40	38	12.6
" 23	P.	9.5			26.84			14 7
" 24	W.	9.6			26.87			12.8
1885.727		9.4	0	36	26.86	+40	38	13.4

Professor Pickering, in the Proceedings of the American society of psychical research (see *Science* vol. vi., p. 155) finds, from discussing a large number of observations, that the knowledge of a catalogue-magnitude of a star on the part of a recorder appears to exert through the medium of 'thought-transferrence,' no influence upon the independence of the observer's estimate of the same.

For the floating dome of the observatory at Nice it is proposed to employ a solution of chloride of magnesium of a density of 1.25, which will not freeze down to—40° C.

Comet 1885 II (Barnard). A conjecture having been expressed by Faye and Krueger that Barnard's comet might be periodic, Dr. Lamp, of Kiel, has computed elliptic elements and finds a period of 8,700 years. He remarks, however that, owing to the uncertainty in the single observations employed, his results can hardly be considered decisive, and the orbit may yet turn out parabolic.