"Mimicry" in Birds

IF Mr. Young will look at the fourth edition of Yarrell's "British Birds," he will find that the fact he mentions (*ante*, p. 486) has already attracted notice, for he will there read (vol. i. p. 616) :—

"In places near Thetford, where the ringed plover is common, skylarks often imitate the note of that bird, making it part of their own song."　　　　　ALFRED NEWTON
Magdalene College, Cambridge, April 19

OUR starlings here, which are a numerous and accomplished colony, have acquired the following notes of other birds :—Curlew, red-shank, blackbird, thrush, magpie, swallow, swift, chaffinch, house sparrow, hedge sparrow. The most successful imitations are those of the curlew, red-shank (the note uttered by the latter on taking wing), and the swallow. I have several times this year been certain that I heard a swallow twittering on the house-top, and found that the note proceeded from a starling.

The jays also in this neighbourhood, which are very plentiful, are very able mimics; the note of the carrion crow is about their most successful effort.　　　　　H. H. S.
Riding Mill-on-Tyne, April 22

The Westinghouse Brake

UNDER the heading, "Notes," in NATURE, vol. xvii. p. 140, there is a paragraph describing the automatic brake of the Westinghouse Brake Company, St. Stephen's Palace Chambers, Westminster, the latter part of which refers to a ball which performs certain functions under different circumstances. In a previous account in the *Times*, three balls are mentioned as being used in the experiment; it also states that several gentlemen were investigating the mathematical principles under which these functions fell. I have not seen any results of their work, neither is there any comment upon it in NATURE. I therefore take occasion to mention it, in order that if any account of it has passed me, I may be informed of it, or that, if no results have appeared, this may lead to the subject being investigated by some of the mathematical correspondents of your esteemed paper.　　　　　G. O. K.

Sound and Density

SINCE velocity of sound does not vary with *density* (Balfour Stewart, Chap. IV., "Elementary Physics"), would you kindly state the answer that should be given to the question, *Why* does sound travel quicker in *water* and *wood* than in *air*, and what is the relation between *density* and *velocity of sound* in *water*, *wood*, *air*?　　　　　J. CAMERON
The Academy, Montrose, April 18

[The velocity of sound depends on the ratio between the mass and the elasticity, and in air (to which Prof. Stewart refers) it does not vary with the density of the air if its temperature only remain constant. In this case the denser the air the greater the mass, but the greater the elasticity in the same proportion. The ratio between mass and elasticity is thus unaltered, and therefore the velocity remains under these conditions the same.—ED.]

OUR ASTRONOMICAL COLUMN

THE TRANSIT OF VENUS IN 1882.—In addition to independent calculations of the circumstances of this phenomenon, founded upon Le Verrier's tables of the sun and planet, to which reference has already been made in NATURE, we have to record the publication of two memoirs upon the same subject, the first by Herr Bruno Peter, who is attached to the Observatory at Leipsic, the second by Dr. Karl Friesach, of Graz, which has been received within the last week. As was to be expected where practised calculators are working upon the same data, the direct results from the tables are in very close accordance with those previously published; indeed the advantage of so many repetitions of such work is not very evident. The differences which the calculated times of the geocentric contacts exhibit are almost wholly due to the employment of different semi-diameters of sun and planet. Le Verrier suggested (*Annales*, vol. vi. p. 40) that for the present the values to be employed should be respectively 958″·424 and 8″·305 for the mean distance. Herr Peter has used 961″·21 and 8″·472, and Dr. Friesach, 960″·0 and 8″·305. Their results for Paris mean times of contacts and least distance of centres are subjoined :—

Transit of Venus, 1882, *December* 6.

		PETER.	FRIESACH.
		h. m. s.	h. m. s.
First external contact	...	2 4 21·4	... 2 4 52·8
,, internal ,,	...	2 25 3·9	... 2 25 11·6
Last internal ,,	...	8 1 56·5	... 8 1 42·6
,, external ,,	...	8 22 39·0	... 8 22 1·6
Least distance of centres	...	5 13 29·9 } 641″·7 }	... 5 13 27·3 } 641″·5 }

ENCKE'S COMET IN 1878.—Observers in the southern hemisphere may be reminded that this comet is likely to be a pretty conspicuous telescopic object in their evening sky, in the first days of August: According to Dr. von Asten's latest researches on the motion of this comet, the period of revolution at the last perihelion passage was 1200·8 days, which, without taking any account of perturbations (not likely to be very material during the present revolution), would bring it again to perihelion on July 27. Mr. Tebbutt, of Windsor, N.S.W., has once found Encke's comet without assistance beyond his own calculations, but it will probably be Dr. von Asten's intention to furnish southern observers with a reliable ephemeris commencing with August next. Observations will not be practicable before the perihelion passage, the comet being too near to the sun's place.

THE "BERLINER ASTRONOMISCHES JAHRBUCH" AND THE MINOR PLANETS.—The volume of this ephemeris for 1880 has just appeared under the joint editorship of Professors Förster and Tietjen. The general contents are similar to those of preceding volumes. The ephemeris of the moon is again transferred, with full acknowledgment from the *Nautical Almanac*, and a great amount of labour of computation is thereby saved, which is made to tell upon the specialty of the work, the preparation of ephemerides of the small planets as far as their orbits are sufficiently determined. The reader who may be in search of the elements of these bodies will find in this new volume of the *Berliner Jahrbuch* the most complete and reliable table yet in the hands of astronomers. It includes orbits of all the minor planets to No. 172, with the exception of No. 155, *Scylla*, for which the necessary materials for calculation are wanting; and while referring to *Scylla*, it may be remarked that the four observations on November 8, 9, 22, and 23, 1875, cannot be represented by an elliptical orbit, which raises a suspicion that those of November 8 and 9 may belong to one planet, and those of November 22 and 23 to another, not, so far, recognised in the list. On examining the table of elements it is seen that No. 153, *Hilda*, has by far the longest period, while No. 149, *Medusa*, is credited with the shortest, according to the calculations of Prof. Tietjen. The observations of *Medusa*, however, extend over a period of eight days only, but they appear very exact, and it has happened that from a similar short interval of accurate observation, very close approximation to the true elements of an elliptical orbit has been attained; we may especially note the case of the short-period comet of De Vico in 1844: from eight days' very precise observations, M. Faye deduced an orbit which, as was pointed out by Prof. Brünnow, was almost identical with the result of his own elaborate investigation of the elements from the whole extent of observation. It is unfortunate that *Hilda* has escaped observation at the last opposition, since of all the small planets it is most desirable to keep this one in view, from the fact of its orbit allowing of a very much closer approach to the planet Jupiter than is possible in the case of any other.