

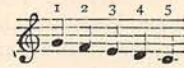
THE MYSTERIES OF CHANGE-RINGING.

AS it ever struck the reader as being little short of a miracle that raw village-lads, with no mathematical training beyond that derived from passing through "the three R's"—at all events, perfectly innocent of such processes as permutations and combinations—could be made to understand and practise change-ringing? A good deal of mystery hangs over this science, and it is placed in most people's minds in the same category as short-hand, Tonic Sol-fa, and Hebrew. In truth it *is* a difficult thing to learn, and no book on the subject that we have ever met with has, in our opinion, succeeded in making the subject perfectly clear to the comprehension of any person who is not able to go into the belfry with "some one who knows" and handle the bell-ropes. Nothing can well be more difficult to explain on paper, and yet we will make an attempt to show the elements, at least, of change-ringing.

We must first know what a bell does when rung—that is, what motions it makes. When you begin, the bell is of course at rest, hanging with mouth and clapper downwards; but before a peal can be begun it must be swung "up"—that is to say, completely upside down—by swinging it first to one side and then the other. Let us suppose this has been achieved. It first swings to one side, say the left, and when it is upside down, it is prevented from swinging quite over by a "stay." This movement of the bell is called a "hand-stroke." Then a slight pull, and it falls again by its own weight, going back the same way, passing over the position of rest below, and swinging up on end again in the other direction, to the right. This is called the "back-stroke." In this way the bell makes what would really be a complete revolution, but for the stay which prevents it, every time it is "up," from turning a somersault, so to speak. During each of these swings—the hand-stroke and the back-stroke—the clapper strikes the bell and it sounds. The ringer's object is to balance the bell so nicely each time it swings up that it does not require to touch the stay—to swing the bell, indeed, as far as it can go without touching the stay, to the place which in mechanics would be called the "dead-point." While the bell is swinging round in the back-stroke to balance again, it goes by its own weight (after the slight pull necessary to bring it back) and the rope is left quite free. We do not propose to do anything more than describe just the simplest form of change-ringing: space would fail to properly indicate the more complicated forms of the art.

Now let us see how the bells are distinguished. We will suppose a "ring" of five. The smallest bell is called the "treble" and the largest the "tenor"—whatever number of bells the ring may consist of. The intermediate bells are called second, third, fourth, and so on, counting from the treble, or first bell, up to

the tenor. When struck in their natural order, thus—



the bells are said to be "in rounds;" and if they were always rung in this way, there would be no change-ringing. But the charming variety heard in good ringing is effected by changing the order in which the bells follow one another, and doing this in a regular and methodical fashion. They are then "in changes."

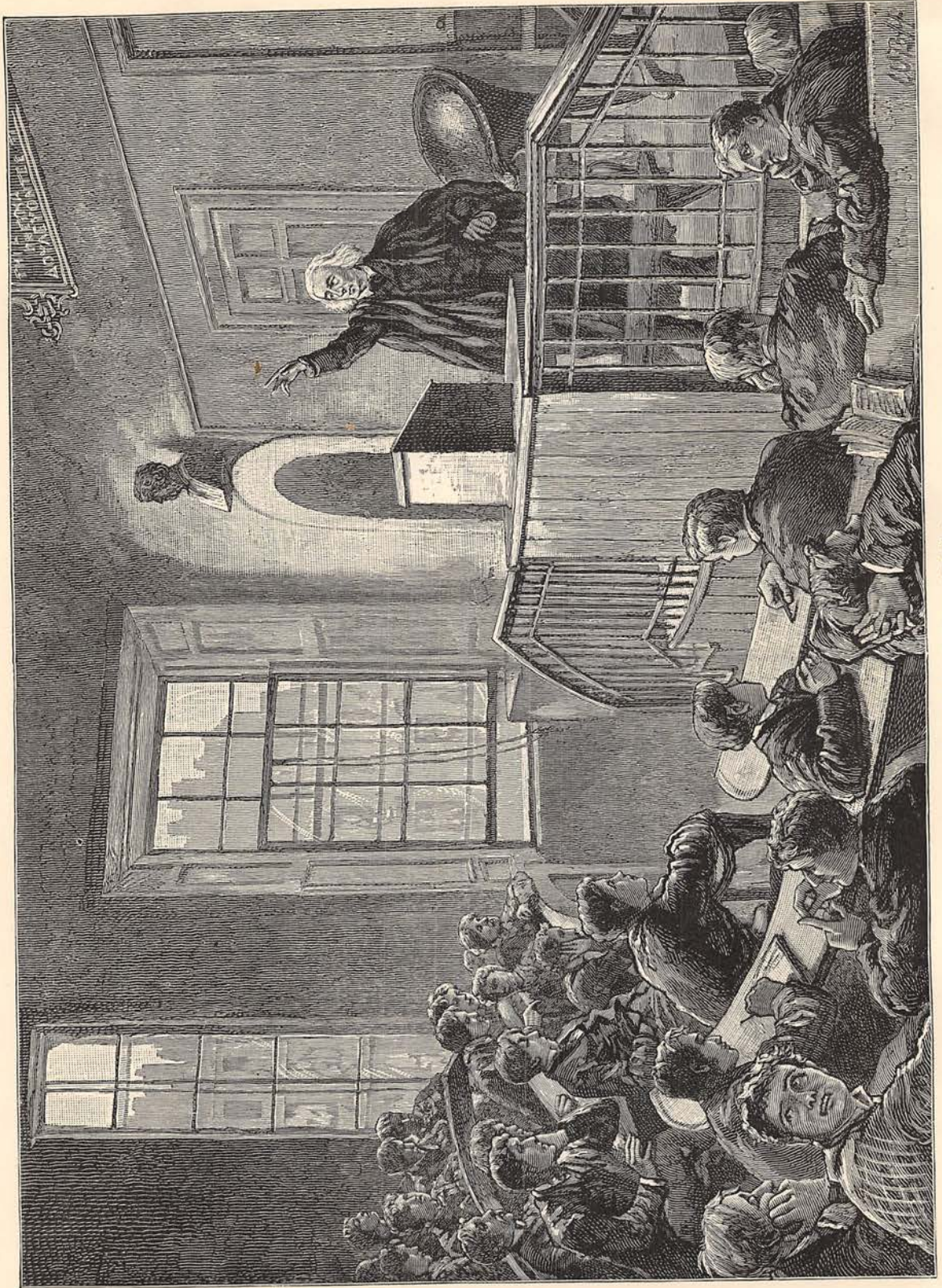
Every bell which strikes first (of the five) in one of these changes is said to be "at lead," and that which strikes last (of the five) is "behind;" the intermediate places being identified as "in two," "in three," and so on. When a bell strikes in its proper place it is said to be "at home." So that in the following change, 1, 3, 2, 4, 5, treble is at lead, third is in two, second is in three, four is at home, and tenor is behind. The changes on our five bells are called "doubles;" those on four bells are known as "singles;" and those on six as "minor," and so on. There are also various methods of ringing (such as "grandsire" or "Stedman"), and if we propose to ring a "peal of grandsire triples," we mean 120 changes upon our five bells in the grandsire method.

The first thing to be clearly understood is "hunting." But we must begin that by ringing a round, 1, 2, 3, 4, 5. Supposing you have the treble bell to ring (represented by the figure 1), your first stroke will swing the bell up on end to hand-stroke, and it will sound; while the other four bells will follow you in the same way in their regular order. You must be careful to listen for the interval which is allowed to elapse between the stroke of each of the other bells (the interval between each ought to be exactly the same), and then when the tenor (or No. 5) has struck, you must follow it, with your back-stroke, at exactly the same interval, and thus you will have entered upon another round, 1, 2, 3, 4, 5, in which the other bells follow you as before. But after tenor has sounded the second time, with *his* back-stroke, you must not follow it at the same interval as before, but allow just twice the time to elapse. The following will make this point quite clear to you:—

Hand-stroke. Back-stroke. Hand-stroke. Back-stroke.

Your own bell must be held "up" a little longer than usual, and not struck so quickly as at back-stroke.

It will be better now to take an example of the



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PROFESSOR BLACKIE LECTURING IN EDINBURGH UNIVERSITY.

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processes known as "hunting up" and "hunting down," and get a first lesson in making changes :—

1 2 3 4 5 . .	In rounds ; hand-stroke.
1 2 3 4 5 . .	" back-stroke.
2 1 4 3 5 . .	Treble in two (or "in 2nds").
2 4 1 5 3 . .	" in three (or "in 3rds").
4 2 5 1 3 . .	" in four (or "in 4ths").
4 5 2 3 1 . .	" behind ; back-stroke.
5 4 3 2 1 . .	" " hand-stroke.
5 3 4 1 2 . .	" in four.
3 5 1 4 2 . .	" in three.
3 1 5 2 4 . .	" in two.
1 3 2 5 4 . .	" at lead.
1 2 3 4 5 . .	In rounds.

(Repeat as above ; treble going to 2nds again.)

Here we have printed the figure 1 (which stands for the treble—your bell) in thicker type ; so that you may more readily follow its course with the eye. In hunting up, that is, from lead to behind, you lead with two rounds, first the hand-stroke and then the back-stroke, as already explained. Then listen and look for* the bell that followed after yours in the round (namely, No. 2), and allow *that* to strike first, and you strike directly after it. (To allow of this, your bell must be held "up" a little longer than usual, as in ringing rounds.) This places you in 2nds. While striking there, listen and look again for the bell which strikes after yours (now No. 4), hold your own bell up again as before—out of its turn, as it were—and let *that* bell go before you, and if you then strike you will be in 3rds. In this way you "hunt up behind," as it is called, until you are the last of the five to strike. In "hunting to lead" or "hunting down," you reverse this process, in each fresh round striking in *front* of the bell which struck just before you in the preceding round—thus striking in *earlier* than usual, each time.

In the next place, we must try to understand "place-making" and "dodging." Here is an example of both :—

3 5 1 4 2
3 1 5 2 4
1 3 2 5 4
1 3 5 2 4
3 1 2 5 4
3 2 1 4 5

Place-making is when a bell strikes twice in succession, in any place except at the lead or behind—those two places being part of the "hunting course," as it is said. No. 3 bell in this example "makes a place" when hunting up to 2nds place, and then returns to lead. This proceeding on the part of 3 will stop all the bells above 2nds (namely, 2, 5, and 4) in their hunting course, and cause them to "dodge," that is to move a step backward in their path and then go on hunting up or down as before. Here, accordingly, we find 5 and 2 "dodging." 5 was hunting up, but when 3 "makes a place," 5 goes back one step (in fact, changes places with 2, which was hunting down), and then goes on hunting up as before. Meanwhile, 2 performs a similar "dodging," and then hunts again in its own direction, which happened to be down.

You have now placed before you all the elements of this great mystery of change-ringing. Out of this hunting, and place-making, and dodging, the whole science is constructed, and the various peals can be rung upon the various methods. There are rules laid down for each movement in the several books on change-ringing which have been published, and to which we must refer the curious reader who thirsts for more information. These rules, however, are preserved simply by tradition in country villages, and are handed down orally from one generation of ringers to another.

STUDENT LIFE AT EDINBURGH UNIVERSITY.

"**H**ARD students," says queer old Burton, author of "The Anatomy of Melancholy," "are commonly troubled with gowts, catarrhs, rheums, cachexia, bradypepsia, bad eyes, . . . consumptions, and all such diseases . . . They are lean, dry, ill-coloured, and all through immoderate pains and extraordinary studies." Surely he is too hard on learning, or times and constitutions have changed. The members of the British Association, as a body, do not resemble patients in a home for incurables. The average college don is as well-favoured and contented-looking a being as you can well find anywhere : quite as robust as an alderman, for instance. And in Scotland—to take younger specimens of the learned genus—the youths who frequent the Univer-

sities are as muscular and healthy as need be ; and yet, for their years, they are certainly the hardest students in Britain, and only equalled anywhere by Germans. That they are, as a class, healthy, is largely accounted for by the fact that they come from the country, most of them. They are stout workers for very sufficient reasons : they are poor, and they come to their Universities for nothing else than learning. A young fellow who has run about barefoot in the fields after his father's cattle, or the son of an Orkney minister with a stipend of £150 a year, or the pupil-teacher who has to learn in winter and teach in summer, does not save and borrow shillings and pence, and half starve himself for four years in a dingy and barren city lodging-house, working hard all day, and most likely acting as tutor to schoolboys in the evenings, and again pursuing his studies into the small hours—he does not do these things, be sure, except from a hunger for knowledge that is well-nigh

* In actual practice the ringer, especially when learning, has not only to keep his ears open, but to use his eyes, and watch the other ringers.