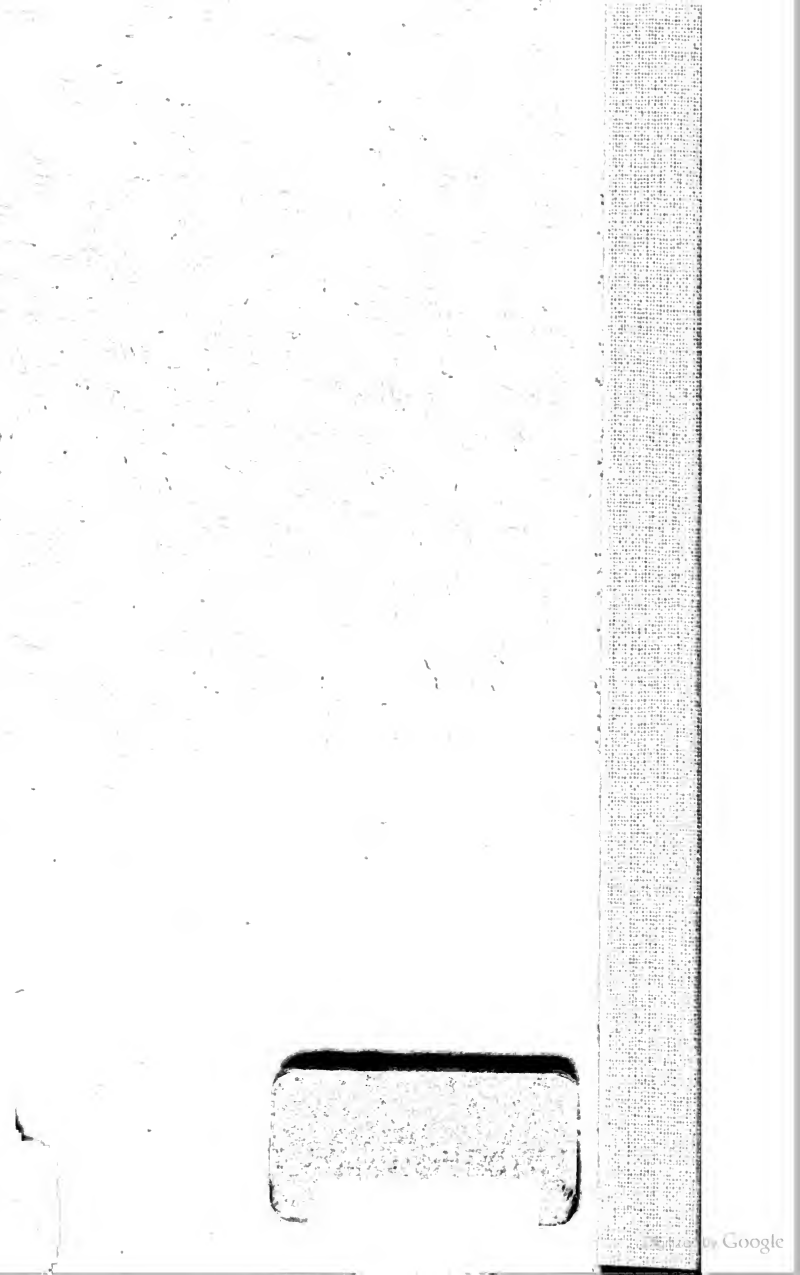


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CHURCH BELLS
AND
RINGING.

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Wm. Law, Knapsey
Oct. 8, 1861.



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CHURCH BELLS

AND

RINGING.

BY

W. T. MAUNSELL, M.A.,

CHRIST CHURCH, OXFORD,

A MEMBER OF THE SOCIETY OF COLLEGE YOUTHS.

LONDON :

JOSEPH MASTERS, ALDERSGATE STREET,
AND NEW BOND STREET.

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PREFACE.

At the request of some of my friends, I have published this article (which appeared in the June number of the *Ecclesiologist*) as a tractate. It having occurred to me that a few plain easy peals would be useful to Clergymen and others, who take an interest in teaching campanology, I have added four very musical five-bell peals on the Grandsire system, which are available either as simple five-bell peals, or as such with tenor for cover, a mode of ringing much and justly admired. I have been induced to give these peals in full, because none of the treatises on ringing do so, and when learners have made themselves masters of these, they will easily comprehend those in the books I refer to, which only give course ends and portions valuable to the experienced ringer, but incomprehensible to beginners: so far, therefore, from seeking to supersede what has been already written, my desire is merely to show how to turn the great and varied information we possess to

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the best account, and to make it as generally useful as possible.

I have selected five-bell peals because so many parishes have five or six bells, and these peals can be rung upon either number, and also on account of the length to which six or seven-bell peals would extend, as will be seen by the table annexed to this paper. It is true that peals are so arranged as to bring the bells round in a much shorter time than all the changes would occupy, otherwise peals on from eight to twelve bells could never be rung at all, still they would be of a length far beyond the limit of these pages.

By the kind permission of Mr. Ellacombe, I have added a letter addressed by him to the Editor of the *Ecclesiologist*, which shows that the exercise of ringing does not (as some have erroneously supposed) promote intemperate habits.

CHURCH BELLS AND RINGING

ALL exercises and amusements that have a tendency to strengthen the mental powers and invigorate the body are worthy of cultivation, as conducive to the *mens sana in corpore sano*. For this reason ringing deserves attention, as an intellectual and bodily pastime, much practised in former days by the aristocratic members of society. The science of change-ringing cannot boast of any great antiquity; for though bells were hung in church spires and towers at an early date, ringing changes in regular and musical order does not appear to have been introduced until the seventeenth century. Before that time, bells hung with a half wheel were either chimed by being moved with their mouths downwards, so that the clapper struck one side only, or pulled up about as high as the upper part of the bell-frame; but when the whole wheel was invented, and the bells swung up to balance, so that the

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clapper should strike both sides alternately, it became manifest that each bell being a note, these notes could be produced in order, and arranged, as in a piece of music, to such an extent as their number would admit of. For instance, 4 bells can be rung in 24 changes; 5, 120; multiply 120 by 6, and 720 appear; and so on to a great extent; but as each of these numbers of changes may be arranged in different succession, (in the same way that an octave or greater or less number of notes of a musical instrument can,) peals are composed which contain great variety, and exercise the memory, whilst the manual exertion of ringing the bell, so as to cause the clapper to strike in proper time, invigorates the body, and promotes health by means particularly beneficial to those engaged in sedentary pursuits.

It is not the purpose of these observations to treat of the science of ringing practically: for that the reader is referred to the treatises of Hubbard, Thackrah, Shipway, and others; and for information upon the antiquity, inscriptions, &c., of church bells, to the works of the Rev. Dr. Gatty and the Rev. W. C. Lukis; and, on bells and belfries, to the able publications of the Rev. H. T. Ellacombe, whose second edition of "Belfries and Ringers," 1861, ought to be in the hands of every clergyman and churchwarden.

But it will be shown that, as church bells were

formerly, and are now more frequently than they were a few years ago, rung by men of greater intellectual power than those into whose hands they had been suffered to fall, it is high time that ringing should receive the same care and cultivation that the church choir does, and that all classes should join in it, as heartily as in the manly game of cricket, or any other of the scientific exercises practised in England. To promote this desirable object campanological societies should be formed into which persons of all grades can be admitted, subject to certain rules as in choral and madrigal societies.

In 1637, the Society of College Youths was established by Lord Brereton, Sir Cliff Clifton, and several other gentlemen, for the practice of ringing. They used to ring at S. Martin's Vintry, on College Hill, near Doctors' Commons, upon a peal of six bells. This church was burnt by the Great Fire of London, and never rebuilt; but the Society still retains the name derived from College Hill, and has in its possession a massive silver bell, which formed the top of the staff which used to be carried by the beadle of the society when the members attended Divine Service at Bow Church, on the anniversary of its foundation, and other occasions; also an old book, in which the names of its members are entered. This book was lost at the time of the great fire,

but was subsequently recovered : in it, and a modern one, there are (amongst many others) the following names :—1641, Captain Harrison ; 1655, Sir Francis Withers ; 1657, J. Brereton, Esq. ; 1664, Fabian Stedman, the author of that excellent system of ringing still known as Stedman's principle ; 1668, Joseph Holland, D.D. ; 1672, Samuel Scattergood, D.D. ; 1682, Sir Thomas Samwell, a gentleman of fortune, and of an ancient family in Northamptonshire ; 1687, Sir Gilbert Dolben and John Dolben, Esq., of Finedon Hall, Northamptonshire ; 1697, Hon. Robert, Charles, and George Cecil ; 1699, Sir Michael Hicks, Sir Edward Irby ; 1711, James King, D.D. ; 1716, Slingsby Bethell, Esq., who was, in 1756, Lord Mayor of London ; 1717, Sir Watkin Williams Wynn, Bart. ; 1725, Francis Geary, R.N., (Admiral Geary) ; 1782, Sir Watkin Lewis, M.P. for, and Lord Mayor of, London ; 1784, Rev. Jos. Winter, Oxford ; Rev. Thomas Sissan, Reigate ; 1797, William Moore, Esq., Herald's College. These names, selected from a very large number, are sufficient to show that ringing was considered an intellectual amusement, worthy of nobles, divines, and scholars. "The School of Recreation, or Gentleman's Tutor in various Exercises," published in 1684, contains several pages upon campanology. Actuated by a love of the science, the late J. P.

Powell, Esq., of Quex Park, Isle of Thanet, Kent, a member of the Society of College Youths, erected, in 1823, a tower in his park, and furnished it with a peal of twelve bells. He required all his men-servants to learn to ring, and rang constantly himself: in 1828, he became the author of several touches, or short peals of triples, on Stedman's principle.

At the present time the Society of College Youths consists of gentlemen, respectable tradesmen, clerks in various capacities, and skilled artizans. No one is admitted except by election, and there are a few simple rules for its support and government, by which its respectability is secured. S. Saviour's, Southwark, and S. Michael's, Cornhill, both of which churches have a fine peal of twelve bells, are the usual places of ringing; and district meetings are occasionally held at S. Mary-le-Bow, S. Clement Danes, and others. The society is open to all England. In 1855, some of its members rang at Arundel, Sussex, on a new peal of eight, given to the church by the late Duke of Norfolk, (who was present); the Vicar, Rev. G. Hart, and his brother, Octavius Perry Hart, barrister, were elected members of the society. The great and good Chief Justice Hale was an able ringer; whilst Anthony Wood and his fellows "often plucked at the bells of Merton College for recreation."

For some years church architecture, psalmody, and church bells fell into general neglect; and it is sincerely to be desired that, now *Churchwardens' Gothic* has been laid aside, and replaced by judicious restoration, and the village choir furnished with good music, the ringers may be cared for, and become the respectable and scientific body that they were in the olden time. This cannot be accomplished without some trouble, and no one can be so proper to bring about a general restoration of the art of ringing as the clergy, assisted by the churchwardens and other respectable inhabitants of the parish. If the minister does not join in promoting the practice of campanology, it will still be necessary to obtain his leave, and that of one of the churchwardens; for it is the law of this country that the church bells must not be rung except with their permission. It may, however, be reasonably expected that, although the rector, or vicar, or licensed curate, has power to silence the bells, he will move in a right direction, and endeavour not to suppress ringing, but to see that it is carried on in a respectable manner, becoming the sanctity of the church.

This view is clearly expressed by Mr. Lukis thus:—"Bell-ringing may be made available in parishes for promoting the moral and religious improvement of the people. That which for

years has been a curse, may be turned into a blessing." And again : " The experience I have had has convinced me that it is utterly futile to attempt to reform the ringers, or to maintain the respectable character of the ringers, without *a regular personal attendance in the belfry*. But it is the same in this as in everything undertaken in a parish ; there can be no success without trouble and perseverance ; and who should grudge his time and trouble in any matter that concerns the well-being of his parishioners ? People may perhaps smile at the idea of a clergyman making a point of entering the belfry with his ringers ; but they may depend upon it that much real good may be effected by so doing."

Before Mr. Lukis's book appeared, Mr. Ellacombe, in his " Practical Remarks on Belfries and Ringers," in 1849, gave an account of his success in carrying out a system with ringers ; and he is one who not only takes the ringers, but the bells also in hand. The clergyman of a parish in Leicestershire is one of the best ringers that enters the belfry ; whilst Mr. E. Beckett Denison, Q.C., Mr. Leonard Procter, Mr. W. T. Maunsell, and other gentlemen, join in the rational and healthy recreation of ringing.

Thus we may hope that the time has come, when the church bells, rescued from the hands of the irreverent and profane, will be classed in

the same category as the church organ and choir. No music can be more soothing, or affect the feelings so strongly by old associations, as the sounds from the old church tower.

Moreover, a little reflection will convince any thinking person that campanology is a science by no means to be despised ; each bell being one note, and the time between the striking in a peal so small, that about a quarter of a second only elapses between the sound of any two bells. The very able little treatise, published for Hubbard, by Fletcher, of Norwich, 1854, is the cheapest and most elementary of those before mentioned, as works of instruction in campanology. Whoever undertakes to learn the science, should be careful not to select a bell too heavy for his strength, and also to make himself thoroughly master of it, so as to ring with a smooth even pull, standing upright, without any distortion of limb or countenance, before attempting changes ; for the conducting of which, it may be suggested that the best and most scientific ringer should call the bobs and singles, and that the caution be given two rounds before the alteration in the course occurs ; a plain lead need not be called ; but it is very useful to call those bells that dodge ; for instance, in a five-bell peal, " five, four, a single," as the case may be. Those who are proficient in campanology do not require these

calls, provided they are previously acquainted with the peals that are to be rung; but in many belfries they are always made; and one of the band is appointed conductor or bob-caller. The treble is the easiest bell for a beginner to learn, being what is termed a whole Hunt bell—that is, it moves in a regular course up and down, striking two blows on leading, and two behind; this will be easily seen by looking at a peal in any of the books on campanology; but practice, with experienced friends, is indispensable.

An essay on bell founding would be out of place here; and those who require new bells, or to have old ones re-cast, had better consult Messrs. Taylor and Co., of Loughborough, Warner and Sons, of Cripplegate, or Messrs. Mears, of White-chapel, than form any theories of their own, however ingenious and scientific. At the same time, a few words upon bells and how to take care of them are not foreign to our subject. It may be observed that bells are generally reputed to weigh heavier than they really do, especially old ones, which it has been the fashion to overrate to an extravagant degree. It is true that many of them are superior to those cast fifty or sixty years ago, when bell-founding and all Gothic arts were at a very low ebb; but, of late years, the profession has much improved, and there are new bells as good as the most ancient. It is also worthy of

observation, that although time and use will not make those that are essentially bad, good; yet, the tone comes out more freely and fully after a bell has been fairly used for a year or two.

A bell is an appropriate memorial of a departed relative. Messrs. Mears put one up at New Radnor for Sir W. S. R. Cockburn, Bart., in memory of his eldest son; and a brilliant-toned treble from the foundry of Taylor and Co. was added to the peal at Thorpe Malsor, Northamptonshire, 1860, as a memorial of the Hon. Caroline E. Maunsell. These bells are lasting monuments, but like other things of this world, suffer from want of care; and when we consider their weight of metal, and the gear composed of wood, brass, and iron, all much exposed to the changes of the weather, it becomes apparent that they require constant attention: those who have the charge of them should examine the frames and bells *very frequently*; the frames ought to be sound and strong, and on no account must wedges be driven between them and the wall. See that the wheels are firm and well screwed to the stock, upon which the bell hangs; the wheels should be composed of two halves screwed together with nuts, so that the wheel (if required) may be taken off without damage; and the stock and wheel must be in proportion to the size of the bell,

neither too large nor too small : the iron straps which connect the stock with the bell must be of sufficient strength to support the latter, and be evenly screwed to the former. Look carefully at the inside of the bell, and pass your hand over the place where the clapper strikes, for if the clapper has become flattened so as to cover much metal, it ought to be heated and beat up to its original shape ; and if there is a considerable hollow made by its striking, the bell ought to be quarter turned on the stock, so that the clapper may fall on a fresh place. This can only be done safely by an experienced person ; and as country carpenters generally know about as much of bell hanging as of geology, it is far better to apply to the bell-founder, than to run the risk of cracking the bell, which unskilful turning is very likely to bring about. It is also worthy of remark that more bells are cracked by suffering the clapper to continue to strike a place made thin and weak by the wear of many years than from any other cause. Mr. Beckett Denison makes the same observation in the chapter on church bells contained in his interesting Lectures on Church Building. He has also carried out a plan of casting the crown of a bell (with a view of giving facility for turning) in the bells of the New Palace, Westminster. Mr. Baker, C.E., has also invented and patented a crown, with an endless

screw and toothed wheel, which will effect the same purpose.¹ Next lift up the covers of the gudgeons or axles upon which the bell moves, to see if they and the brasses in which they work are fast; the former in the stock, the latter in the frame. They must also have a sufficient supply of proper grease: if gudgeons or brasses are defective, the bell-founder should be again applied to; but his assistance will not be often required if those who have the care of the bells take a little trouble in attending to them. The best mixture for lubricating the gudgeons is composed in the proportion of four ounces of *fresh* lard melted down with two tablespoonfuls of the best salad oil, and some of it may be put on the pins upon which the clappers hang; the sliders should be very smooth and be rubbed with black lead. If these directions are followed, bells will be preserved, and change-ringing pursued with comfort and pleasure.

Musical hand-bells, tuned to the chromatic scale, are very useful for practising campanology. They require a little salad oil to be put on the clapper-pins occasionally, and when the leather plugs in the clappers become battered down they should be taken out and new ones inserted. The

¹ An account of this ingenious plan will be found in "Lukis on Church Bells," and the "Civil Engineer's and Architect's Journal" of March, 1856.

knowledge of the method of peals is attained by the use of hand-bells ; but diligent practice on church bells is necessary to enable any one to become master of his bell, and qualified to take his place in a campanologian band. It must be understood that these remarks apply to the half-pull system of change-ringing.

Before bringing these remarks upon ringing to an end, let it be recalled to mind how well qualified this science is to unite all classes ; inasmuch as the nobleman and mechanic may engage in it ; and we all know how amusements draw men of different grades in society towards each other ; the great become acquainted with those below them, whilst the humble look up to their aristocratic brethren with feelings of regard and good fellowship ; a kindly union is established, and with it a desire of mutually assisting one another. Who can gainsay this ? who will consider it as unworthy of notice ? All men are equal in the hunting-field—all strive to win on the cricket ground—why then should the ringing island (as England has been called) despise campanology, and cast that science to those who are neither qualified by moral conduct nor intelligence to uphold it ? The ringers in every parish ought to be regular Churchmen, and attend to chime for Divine Service, showing that they are zealous in the performance of their duty towards God and

His Holy Church ; and then by the means pointed out in these observations we may hope and trust that the church bells will bring together and unite all ranks, calling them to brotherly kindness and concord as well as to prayer and praise.

M.A., CH. CH., OXFORD.

A LETTER FROM MR. ELLACOMBE.

“ To the Editor of the Ecclesiologist.

SIR,—Will you allow me to follow up the subject of Ringing so ably advocated in your last number by a Christ Church M.A.?

“ I wish to lay before your readers a few extracts from letters which from time to time I have received from respectable persons who have for years devoted much of their time and attention to ringing as a science and an amusement. All these tend to show that where it is taken up out of love for the thing, and a desire to be useful, it may be followed without damage to health or morals, and that it is quite a mistake to suppose that it necessarily leads to drinking and other low habits; not a jot more so than becoming a member of a madrigal society or a cricket club in which various grades of society in these days unite so happily together. It is only by such a union that we can hope to restore the belfry to a state of respectability, and so by degrees cast out the low characters.

“ First then, with regard to rules, one writes thus,—

“ ‘ Rules are very necessary to conduct a band of ringers generally, but not so much so when the clergyman himself takes an interest in the ringers and the ringing of the bells. Coarse language, drinking and smoking are the chief things to be put down, for they are not only a great evil, but things totally at variance with the mind in acquiring and practising the real art of change-ringing. It is a very mistaken idea that

ringing is labour, or that it requires more refreshment than a musician beating a big drum in an orchestra. To wit, myself, I am not a strong man, and only just recovered from three months' illness, caused by sitting too much at my desk, and over-anxiety in my business. Now I rang the 5th bell in a peal of 5040 Grandsire Triples on Thursday last at —— (three hours). All the refreshment I took or required was a glass of ale before and after the peal, and the other ringers in like manner.'

"On another occasion the same person writes thus,—

" 'The public seem to think that ringing is extremely laborious work, and that the beer-can is a necessary appendage ; but if they understood the art of variation, they would enjoy the exertion as we do. It is a pity that this noble art should be so little understood by the more enlightened upper classes. How delightful it would be to see a body of gentlemen take to the ringing of the bells of their parish church, learning the art thoroughly. I am convinced it only wants a start, and then we should have *in the church*, among the congregation, those who resort to the steeple, and we should shut out the low characters who now infest the belfries.'

"Another most respectable ringer, in the Midlands, writes thus,—

" 'No music can be compared with bells in full swing—no recreation so manly, amusing, and skilful as the ringing of them. I wish the science were indispensable among the qualifications of a clergyman, who has, or who ought to have, the command of both bells and ringers ; then we might hope for a reformation in ringers, and an advancement of the science, but till then, I fear all attempts will be troublesome, if not futile.'

"Another experienced ringer, a respectable tradesman, writes thus,—

“ I have much pleasure in forwarding to you my opinion on the practice of scientific ringing on church bells, trusting it will help the advance and gradual perfection of an art deserving the consideration of a higher class of society, and remove any incumbrance to its progress. Speaking with an experience of sixteen years, (during which I have taken part in some of the greatest performances ever achieved by any society,) I can safely assert that it will be found a healthy exercise, and afford much innocent and intellectual amusement for the employment of leisure hours, and will invigorate and exalt the mind, much more so than the depressing excitement of profane mirth and intoxicating liquors, a practice too often indulged in by labouring men who have followed ringing not as amusement, but as a profession, that they may procure the means of gratifying their desires for dissipation and vice, which has been a great drawback to this noble science. But, to show that excessive drinking can be and is avoided by societies who follow ringing for both mental and bodily exercise, in the whole of the extraordinary performances in which I have taken part, (which have varied in number of changes from 5000 to 7524, in some of the most difficult methods, and in time from three to six successive hours, according to the number of changes and weight of bells,) I have never in one instance known one of the performers get the worse for liquor, thus showing that those who acquire the greatest scientific attainments are exceptions to the class of persons so often found among ringers in towns where they are sometimes composed wholly of the working classes.’

“ Another writes thus,—

“ ‘ I have rung in several peals, such as Stedman’s Caters, Treble Bob, and one of each Superlative Surprise, and Norwich Court Bob, and was in the long peal of 8448, on the memorable 10th of April, 1848, at S. Matthew’s, Bethnal Green. I never drink any thing but tea, coffee, and water, being what is termed an abstainer from all intoxicating drinks for about twenty years. I have followed ringing from my in-

fancy, though there are very many superior performers to myself in London.'

"I may here add, that upon inquiry I am told that the writer of the above is quite a *first-class* man in *arte campanologica*.

"To the above may be added an extract from a letter I received a few days ago from a gentleman in the North, who has lately become a ringer. He speaks in raptures of the science and pleasure of change-ringing, but deplores the drunkenness which sometimes disgraces the ringer who is *paid* for a wedding-peal, or other joyous event, and in conclusion he says,—

"'All endeavours to improve the morality of the belfry must promote the improvement and diffusion of good change-ringing. The main source of dissipation is the money obtained for ringing at weddings. I think it would be a great improvement if the fees paid on such occasions were collected by the church authorities into a permanent fund for the maintenance of ringing, instead of being given directly to the ringers.'

"In my Practical Remarks on Belfries and Ringers, I have alluded to the evils of Peal-ringing on Sundays. However delightful and poetical may be the thought connected with a cheerful peal on a Sunday morning, every year convinces me more and more that in most cases it is productive of evil. With how many is Sunday an idle day, and when such characters collect about the belfry, (and the sound of the bells is always inviting,) the more there will be assembled to tempt and to draw off to the public-house. Or it may be, in a rural parish, some necessary work has been deferred for the sake of joining in the morning peal, and so the time for getting ready for Church is taken up, and the service is not attended. In those parts of England where it is the regular custom to

ring a certain time before the service, (as in the North and the Midlands,) it is notorious that few, if any, of the ringers form part of the congregation. On the contrary, when the clergyman walks into the church, they walk out; perhaps, after a long peal, they think they are not quite in a fit trim to appear among their neighbours, though little ashamed to be seen retreating. Surely, therefore, it is the best plan not to allow any ringing for any person or thing on Sundays excepting indeed on the early mornings of Festivals.

"In proof of the evil of which I am now speaking, I once received a letter from the son of one of the ringers in my then parish, in which he implored me to use my influence and authority to put a stop to Sunday ringing, recounting in his letter the evil and misery he had witnessed in his father's family, all which had resulted from this practice, and that by my so doing, I should prevent a multitude of sins, and save not one, but many souls from eternal misery.

"Another old and most respectable scientific ringer, in the Midlands, has very lately written to me, in which he deplores Sunday ringing. He says,—

" 'For thirty years and more I have attended the steeple at leisure times, and regularly, inside the church, seldom missed twice on the Sabbath. I have always shown a good example to the ringers. Years back I was tempted to ring one or two long peals on a Sunday, *but it has always been a great sting to my conscience.*'

"Hoping that much good will be promoted by the publication of the foregoing,

"I am, yours truly,

"H. T. ELLACOMBE, M.A.,

"*A Member of the College Youths.*

"*Rectory, Clyst S. George, July 1, 1861.*"

THE QUEEN'S BIRTHDAY. 1861.

The following letter appeared in the *Northampton Herald* of June 1st, addressed to the Editor,—

“SIR,—The newspapers have lately informed us that May 24th, being Her Majesty's birthday, the bells of the different churches rang merry peals, but these merry peals, as they are called, are in many places mere clash and clatter, quite different from scientific change-ringing, and why is this so? Many persons have thought fit to abuse ringing as a low amusement, and ringers as drunken sots. I deny both these assertions. Lord Brereton, Sir Matthew Hale, Sir Gilbert Dolben were, and Mr. E. Beckett Denison with other gentlemen, and many clergymen with Mr. Ellacombe, Rector of Clyst S. George, Devon, at their head, are now constant ringers, and the highly respectable Society of College Youths, famed for their performances, have lately rung on the twelve bells of S. Michael's, Cornhill, a peal of 8580 changes in six hours and forty-one minutes—weight of tenor 41 cwt. This shows that ringing is not low. Mr. Ellacombe, speaking of the advantage to be derived from the clergyman attending to the Church bells, says, ‘And it may be well worth his while to become a ringer, as some I know have done, and so to raise the tone or caste of the ringers, and induce others to join, not for filthy lucre's sake, but for the honour and pleasure of the thing. The art of change-ringing is difficult, but much may be done, and easily, before advance is made to that high science.’ These are the words of one who has had great experience in this matter, and is also himself a practical ringer.

“ With regard to ringers being drunken, there may be drunken ringers as well as drunken masons and carpenters, but no reason why there should be one more than another. Moreover, change-ringing requires the faculties to be unclouded, the head clear, the memory retentive, and the body healthy, none of which requisites are possessed by the drunkard; in short, the assertion is as illogical as it is false; it is drawing a universal conclusion from particular premises, and as far from the truth as to say some farmers get drunk at market, therefore farmers are a drunken class, a thing clearly untrue.

“ Yours,

“ A CHURCHMAN.”

The peal alluded to in this letter, was rung April 27th, 1861, being a complete peal of Cinques on Stedman's principle, and the greatest number of changes ever rung in that intricate method upon twelve bells.

Performers.

H. W. Haley, Composer		Jas. Robt. Haworth	7th
and Conductor, Treble		Geo. E. Ferris	8th
Thomas Ray	2nd	Matthew A. Wood	9th
John Bradley	3rd	Edwd. S. Landsell	10th
Robert Jameson	4th	Geo. A. Muskett	11th
William Green	5th	James Dwight	Tenor
George Stockham	6th		

Attested by Messrs. Cox, Boswell, and Miller of the Cumberland Society, and other competent judges.

W. T. M.

TABLE,

Showing the number of changes and time occupied by peals of regular permutation to the greatest extent the number of bells will admit of.

No. of Bells.	Name.	No. of Changes.	Time.
4	Singles	24	1 minute
5	Doubles	120	5 minutes
6	Minor	720	Half-an-hour
7	Triples	5,040	3 hours
8	Major	40,320	1 day and 4 hours
9	Caters	362,880	10 days and 12 hours
10	Royal	3,628,800	15 weeks
11	Cinques	39,916,800	3 years and 60 days
12	Maximus	479,001,600	37 years and 355 days

This table applies to all systems, Grandsire, Bob, and Stedman's principle. And it may be observed that in Grandsire peals the bell in third's place lies still¹ a whole pull at the commencement of changes, whilst in Bob the fifth does, the system upon which the peal is formed will be seen by observing this; Stedman's principle is much more complex, inasmuch as, unlike the other two, no bell hunts regularly, i.e. moves up and down step by step. This subject is well treated at pages 8 to 14, of "Hubbard's Elements of Campanalogia." Fletcher, Norwich. 1854. Price 3s. 6d.

¹ A bell is said to lie still when it strikes two or more blows in the same place.

GRANDSIRE.

21354	31524	31254	21534
23145	35142	32145	25143
32415	53412	23415	52413
34251	54321	24351	54231
43521	45231	42531	45321
45312	42513	45213	43512
54132	24153	54123	34152
51423	21435	51432	31425
15243	B 12453	15342	B 13452
12534	14235	13524	14325
21543	41253	31542	41352
25134	42135	35124	43125
52314	24315	53214	34215
53241	23451	52341	32451
35421	32541	25431	23541
34512	35214	24513	25314
43152	53124	42153	52134
41325	51342	41235	51243
B 14352	15432	B 14253	15423
13425	14523	12435	14532
31452	41532	21453	41523
34125	45123	24135	45132
43215	54213	42315	54312
42351	52431	43251	53421
24531	25341	34521	35241
25413	23514	35412	32514
52143	32154	53142	23154
51234	31245	51324	21345
15324	S 13254	15234	S 12354
13542	13245	12543	12345

In all peals B denotes a bob—S a single.

GOG MAGOG.

21354	21534	21453	41532
23145	25143	24135	45123
32415	52413	42315	54213
34251	54231	43251	52431
43521	45321	34521	25341
45312	43512	35412	23514
54132	34152	53142	32154
51423	31425	51324	31245
15243	S 13452	B 15342	S 13254
12534	13425	13524	13245
21543	31452	31542	31254
25134	34125	35124	32145
52314	43215	53214	23415
53241	42351	52341	24351
35421	24531	25431	42531
34512	25413	24513	45213
43152	52143	42153	54123
41325	51234	41235	51432
S 14352	15324	S 14253	B 15423
14325	13542	14235	14532
41352	31524	41253	41523
43125	35142	42135	45132
34215	53412	24315	54312
32451	54321	23451	53421
23541	45231	32541	35241
25314	42513	35214	32514
52134	24153	53124	23154
51243	21435	51342	21345
B 15234	S 12453	15432	S 12354
12543	12435	14523	12345

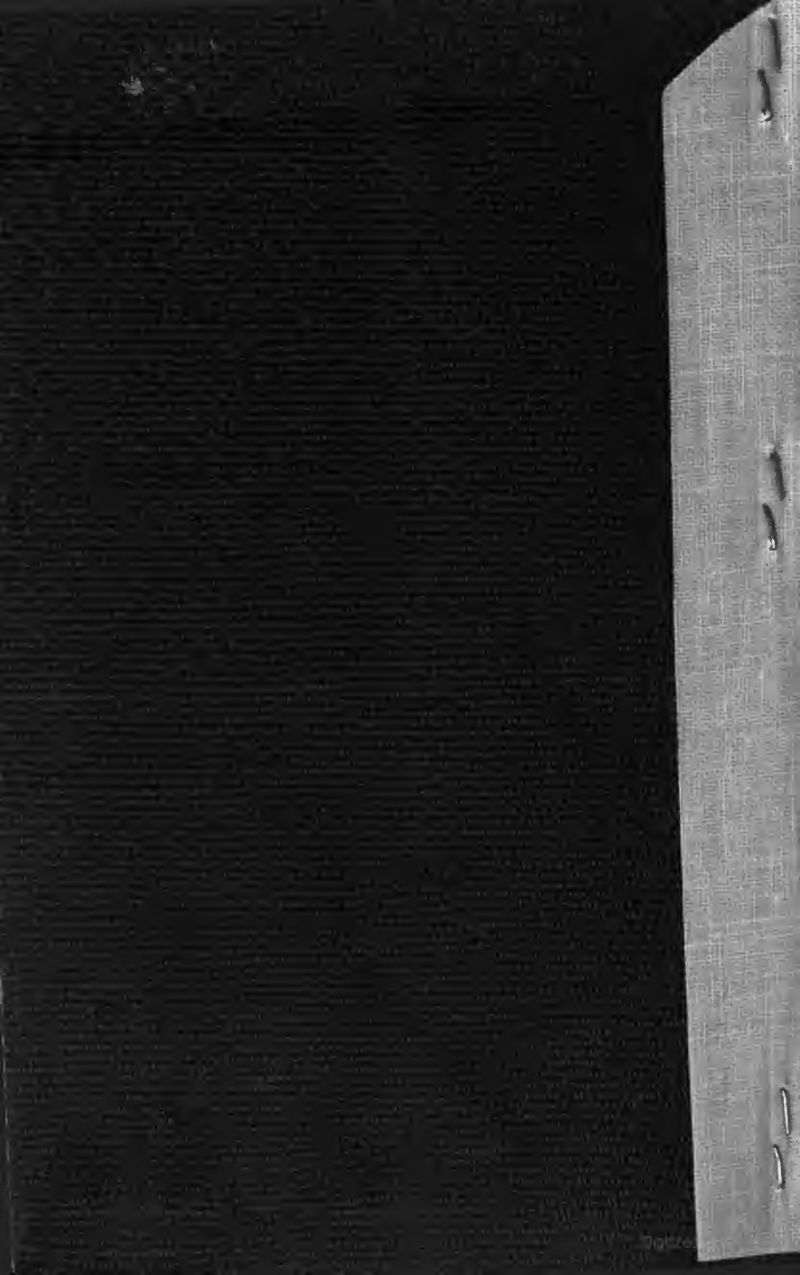
RINGER'S DELIGHT.

21354	31542	21453	21543
23145	35124	24135	25134
32415	53214	42315	52314
34251	52341	43251	53241
43521	25431	34521	35421
45312	24513	35412	34512
54132	42153	53142	43152
51423	41235	51324	41325
B 15432	S 14253	15234	S 14352
14523	14235	12543	14325
41532	41253	21534	41352
45123	42135	25143	43125
54213	24315	52413	34215
52431	23451	54231	32451
25341	32541	45321	23541
23514	35214	43512	25314
32154	53124	34152	52134
31245	51342	31425	51243
S 13254	B 15324	S 13452	15423
13245	13542	13425	14532
31254	31524	31452	41523
32145	35142	34125	45132
23415	53412	43215	54312
24351	54321	42351	53421
42531	45231	24531	35241
45213	42513	25413	32514
54123	24153	52143	23154
51432	21435	51234	21345
15342	S 12453	B 15243	S 12354
13524	12435	12534	12345

EVENING PLEASURE.

21354	31524	41352	31542
23145	35142	43125	35124
32415	53412	34215	53214
34251	54321	32451	52341
43521	45231	23541	25431
45312	42513	25314	24513
54132	24153	52134	42153
51423	21435	51243	41235
15243	S 12453	15423	S 14253
12534	12435	14532	14235
21543	21453	41523	41253
25134	24135	45132	42135
52314	42315	54312	24315
53241	43251	53421	23451
35421	34521	35241	32541
34512	35412	32514	35214
43152	53142	23154	53124
41325	51324	21345	51342
B 14352	15234	B 12354	15432
13425	12543	13245	14523
31452	21534	31254	41532
34125	25143	32145	45123
43215	52413	23415	54213
42351	54231	24351	52431
24531	45321	42531	25341
25413	43512	45213	23514
52143	34152	54123	32154
51234	31425	51432	31245
15324	B 13452	15342	B 13254
13542	14325	13524	12345

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