THE MONTHLY AND OFFICIAL RECORD GAZETTE

No. 12. Vol. XIII

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Published under Official Authority, on the 1st of each month, at the Chief Offices of the Cyclists' Touring Club, 139 & 140, Fleet Street, London, E.C.

(All Communications relating to Advertisements in this *Gazette* should be addressed to T. B. Browne, 163, Queen Victoria Street, London, E.C.).

THE

MONTHLY GAZETTE

[FOUNDED 1878. INCORPORATED 1887.]

And ✣ Official ✣ Record.

No. 12. Vol. XIII. [NEW SERIES.] DECEMBER, 1894.

All Communications relating to the Editorial and Literary Departments of the "Gazette" to be addressed to "the Editor" and to Club Business (orders for Uniform excepted—for which see special notice upon another page) to "the Secretary," at the Chief Offices: 139 and 140, Fleet Street, LONDON, E.C. Matters upon which a reply is desired must be accompanied by a stamped and addressed envelope, and Members should quote their Membership Numbers upon all occasions. All Contributions intended for insertion in the "Gazette" must reach the Editor not later than the morning of the 20th of the month.

The Editor will be glad to hear from Members or others competent and willing to contribute Original Articles on Mechanical or other subjects connected with Cycling and having relation to the general objects of the C.T.C. MSS. (Tours excepted) will be paid for, and those not accepted will if possible be returned, but no responsibility will be taken for any loss of MSS.

THE RENEWAL OF SUBSCRIPTIONS.—SPECIAL NOTICE.

Each member of the C.T.C., whether lady or gentleman, is hereby apprised of the fact that the Annual Subscription of 3/6 is due on the 31st December instant, and that payment must be made on or before the 31st JANUARY next if the member would avoid the penalty incurred by non-compliance with this rule.

E. R. SHIPTON, Secretary.

Chief Offices: 139 & 140, Fleet Street, London, E.C.,
1st December, 1894.

Contents.

Editorial.

THE RENEWAL OF SUBSCRIPTIONS.

Attached to the outer cover of the current issue will be found a form by means of which each member is requested to renew his subscription for the forthcoming year. The latest day for receiving payment is the 31st proximo, but it is earnestly to be hoped that long ere the end of the current year the large majority of our readers will have discharged this obvious duty, and we appeal to them with confidence accordingly.

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TO CANVASSING MEMBERS.

In addition to the form of renewal and the envelope in which it may be most conveniently returned, there is enclosed in the current *Gazette*—save in the case of those districts in which a contest arises in connection with the general election—a form of application for membership to be used by all fresh candidates. Members who are able and willing to secure for the Club fresh adherents—and who could not if he but made the effort?—are reminded that a further supply of these forms may be obtained of the Secretary upon application, and that by joining now new members will secure the complete issue of the *Gazette* for 1895.

TO ALL AND SUNDRY.

The new method of appointing hotels to which extended reference has been made in previous issues opens for the first time a way whereby the leading hotels in every place of importance—hotels that hitherto would not look at the fixed and moderate Headquarters tariff—together with houses which could not with monetary advantage to the membership be appointed even as Quarters may be placed under contract at their ordinary tariff, subject to the proviso that a discount of —— pence in the shilling shall be allowed to members of the C.T.C. As a consequence, it is incumbent upon us to urge every reader who knows of desirable and reliable houses of either class, or of an intermediate grade, to at once communicate with the Chief Consul of the County in which they are situate—or, in default, with the Secretary—giving their names and addresses. Thus only can fair trial be given to the new system, and the requirements of members of all grades be successfully met.

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TO CONSULS ACTIVE AND PROSPECTIVE.

Ere the current issue is in the hands of our readers each Chief Consul will have received from Headquarters a supply of the many forms relating to the compilation of the Handbook for the forthcoming year. These forms embrace the usual inquiry blanks which are annually sent by the C.C. to each Consul in his division, and it is in respect to these latter that we would earnestly bespeak for the C.C. the co-operation to which he is entitled. Apart from the customary duties of office, the Chief Consul has this year thrown upon him the task of thoroughly revising the hotel arrangements in his county, and, wherever practicable, placing each hotel under contract under the new system. His need of assistance is therefore the more marked.

Another matter which deserves more than passing mention is the indifference only too frequently displayed by private members to the oft-repeated appeals of the Chief Consul for volunteers who will act as Consuls. It is simply impossible for a C.C. to satisfactorily administer a large area unless he be favoured with assistance in this capacity, and we accordingly appeal to every member to put to himself the questions—"Is a Consul wanted in my locality?" and "Cannot I act?"

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CHEAPER MACHINES.

The Committee appointed by the Council at the request of the last Annual General Meeting to consider whether or not some arrangement can be entered into with manufacturers or agents, whereby members of the C.T.C. may secure a more liberal discount off their machines, presented their report to the last Council Meeting. This report was the outcome of much discussion and of much correspondence, and it embodied the only scheme which the Committee regarded as practicable. It was, however, unanimously rejected. The subject bristles with difficulties, and much as the Council desired to meet the wishes of the membership they reluctantly came to the conclusion that nothing can be done, at any rate at present. Of course, if any enterprising maker or agent care to give special terms to members of the C.T.C. he is at liberty to make known the fact in the usual way, when he will in all probability benefit.

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PARISH AND DISTRICT COUNCILS.

The current month witnesses the first elections under the Parish Councils or the latest Local Government Act. As we understand the provisions of the measure, the Parish Councils will have no jurisdiction over the roads, but all roads not denominated "main" and dealt with by the various County Councils will be under the charge of the District Councils about to be chosen. This being so, it behoves every reader—particularly if he be a ratepayer and a voter—to see to it that the various candidates are sound upon the Roads question. To this end he should send us a postcard for a supply of the literature issued by the Roads Improvement Association, and then make it his duty to enquire of the candidate whether or not he will undertake to vote for the adoption of the principles of road maintenance therein laid down. These principles—apart from the improvement they effect in other ways—involve a saving of the ratepayers' money, and as a consequence the answer should be a foregone conclusion.

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CONTINENTAL TOURING.

The impetus that has been given to Continental touring by the removal, at the majority of the French ports, of all Customs restrictions to members of the C.T.C. may be judged from the fact that the Chief Consul for the Foreign Division (Mr. S. A. Stead) received no less than 466 enquiries for route information during the past season! This, from every point of view—save perhaps Mr. Stead's—is very encouraging, but we venture to think that the number of wheelmen who in the coming year will set sail for the Continent in general, and for France in particular, will be still greater, especially as a vastly-improved Road Book (the new edition of Vol. I. of the Continental series) will then in all probability be placed at their disposal, and the few remaining barriers to free ingress and egress removed out of the way.

Official Notices.

THE RENEWAL OF SUBSCRIPTIONS.

The attention of members is directed to the fact that the renewal of subscriptions is now in order. A form of remittance is attached to the cover of the current *Gazette*, and an early compliance with its terms is requested. It will materially facilitate matters at Headquarters if each reader will remit during the current month.

TO GERMAN MEMBERS.

The undersigned is quite prepared to receive the annual subscription of 3s. 6d. or m. 3.60, together with the renewal form for 1894, and will undertake to forward both to London.

AN DIE MITGLIEDER DES C.T.C. IN DEUTSCHLAND.

Unterzeichneter ist gern bereit, den Jahres-beitrag 3s. 6d. oder m. 3.60, sowie den Erneuerungs-bogen per 1894, in

Empfang zu nehmen und insgesammt nach London zu befordern.

C. A. TREUTER,
Chief Consul German Division,
5 Colonnaden Strasse, Leipzig.

THE NEW HANDBOOK.

The preparations necessary to the production of the 1894 Handbook have already been set on foot, and in a few days each Consul will receive from his Chief a detailed list of queries relating to his Consulate. To these queries he is asked to reply with promptitude and despatch.

For the convenience of members requiring copies of the new Handbook—as also badges and other accessories—a form of order is enclosed herein.

It may not, perhaps, be amiss to add that we shall gladly welcome any hint or suggestion having for its end the improvement of the new edition of this indispensable guide.

CONSULAR VACANCIES.

The undermentioned vacancies have been notified to us by the Chief Consuls set over the various counties referred to, and members willing to act are requested to communicate with the Chief Consul of the county concerned, or with the Secretary.

SURREY.—*(Chief Consul, Dr. F. Powell, Hillbank, Redhill.)*—Bagshot, Caterham, Cobham, Esher or Ripley, Ewell, Kingston-on-Thames, Leatherhead, and South-east District of London.

SUSSEX.—*(Chief Consul, Dr. F. Powell, Hillbank, Redhill, Surrey.)*—Battle, Bognor, Cuckfield, Hailsham, Hassocks, Littlehampton, Midhurst, Newhaven, Rye, Uckfield, and Winchelsea.

THE BRITISH ROAD BOOK—SCOTTISH SECTION.

Fourth list of deletions to be made in the June, 1894, Schedule :—

ARGYLL—No. 18.
AYR—Nos. 20, 30, and 31.
FIFE—Nos. 9, 17, 18 and 23.
INVERNESS, ETC.—Nos. 17, 27, 31, 32, 38 and 39.
LANARK—Nos. 4, 5, 16 and 27.
PERTH, ETC.—Nos. 10, 11, 12 and 56.
ROSS AND CROMARTY—No. 17.
ROXBURGH : SELKIRK—Nos. 12 and 13.

TO WESTERN SCOTTISH MEMBERS.

A meeting of members will be held in the Grand Hotel, Charing Cross, Glasgow, on Tuesday evening, December 4th, at eight o'clock. Members resident in the counties of Lanark, Renfrew, Ayr, Argyll, Bute, Dumbarton, and Stirling are invited to attend. J. B. STEWART, C.C.

EDINBURCH SECTION—RUNS FOR DECEMBER, 1894, AND JANUARY, 1895.

Date.	*Destination.*	*Meeting Place.*
Dec. 1st	(Impromptu)	Abbey Church, 3.30
*Dec. 22nd	Cramond	Rutland Street, 3.30
†Jan. 1st (Monday)	Leadburn	Mayfield, 12 noon
Jan. 6th	Roslin	Mayfield, 3.30

* Special Christmas run.

† Special New Year's Day run if weather favourable.

Good attendance requested for both these fixtures.

ARTHUR POYSER, Hon. Sec.,
6, Cameron Crescent, Dalkeith Road, Edinburgh.

THE EDITOR'S ALBUM.

The Editor will be glad to receive the photographs of members, and, if desired, will send his own "counterfeit presentment" in return.

In addition to the 1400 contributions already acknowledged the needful donation has this month reached him from the following :—

The Rev. J. T. Fowler, M.A. (D.C.L.), Durham; Messrs. J. Clapham, jun., Hornsey; G. F. Fingell, Brentwood; H. J. Moxon, Cambridge; and A. C. Roper, Exeter.

The Council.

The usual monthly meeting was held at the "Royal" Hotel, Crewe, on Saturday, November 10th, 1894, at 2.0 p.m.

PRESENT :

C.C. H. CROYDON ROBERTS, London (Chairman).
R.C. O. H. BEATTY, Surrey.
R.C. J. LYON DENSON, Cheshire.
R.C. W. DICKINSON, Lancashire.
R.C. J. H. HERBERT, Staffordshire.
C.C. J. T. LIGHTWOOD, Lytham.
R.C. T. J. SCOTT, Lancashire.
R.C. J. J. H. STURMEY, Grouped Counties of England.
R.C. J. F. SYMES, Grouped Foreign Countries.
E. R. SHIPTON, Secretary.

RESOLUTIONS, ETC.

141.—"That the resignation of Mr. Leonard Brown, of Brentwood, as Chief Consul for the County of Essex, be accepted with regret."

142.—"That Mr. G. H. Evans be appointed Chief Consul, *pro tem.*, for the County of Essex."

143.—"That the Council are of opinion that no scheme having for its object the purchasing of machines by members at reduced prices can at present be adopted with advantage to the membership."

REPORTS OF COMMITTEES.

FINANCE.

(a) The Chairman reported that Mr. T. B. Browne had given notice to terminate the agreement under which the advertisement department has been worked by him, but that temporary arrangements had been made for his continuing the work upon commission, pending further enquiry and consideration on the part of the Committee. Beyond this there was nothing special to report.

MAP AND ROAD BOOK (ENGLAND AND WALES).

(b) The Chairman reported that another meeting of the Committee had been held, at which further consideration was given to the suggested insurance of the Club's property, and additional enquiries were determined upon.

The Editor's account for petty expenses was also passed for payment, but as it appeared that the outlook as regards the production of Vol. II. by the next riding season does not appear to be hopeful, a special meeting of the Committee to consider the whole matter had been determined upon, and the result will be reported at the next meeting.

RIGHTS AND PRIVILEGES.

(c) The Chairman reported that replies had now been received from the London, Chatham and Dover, and the South-Eastern Railway Companies to the effect that they were still unwilling to adopt the scale of charges for the conveyance of cycles agreed to by all the other companies forming part of the Railway Clearing House Committee.

He further stated that a majority of the Committee were in favour of legally raising the question as to what interpretation should be put upon the term "or otherwise" in that Section of the Local Government Act which enjoins that the rider of a cycle shall, when overtaking other traffic, "give sufficient and audible warning of his approach by means of a bell, whistle, or otherwise." The feeling of the meeting was, however, against the Council taking any such step unless it may hereafter happen that some member or individual is prosecuted and fined for neglecting to give warning by means of a bell or whistle, *although he proved to the satisfaction of the Court that he gave sufficient and audible warning in some other manner.*

The Chairman further reported that negotiations are in progress for the erection of Danger Boards in various parts of the country, and that legal advice has been given gratis to many members who have applied therefor.

(g) Applications for exemption from the rule which provides for the attendance of each Representative Councillor at two Council Meetings during the Club year, were received from Mr. W. Bashall, Middlesex; Mr. J. P. Derrington, Warwick; and Mr. J. Constable, Doncaster; but, after careful consideration of the extenuating circumstances applying in each of these cases, it was resolved,

144.—"That the exemption asked for by Messrs. Bashall, Derrington, and Constable be not given.

(h) An application from Mr. R. T. Lang, the honorary secretary of the Northumberland and District Association of the C.T.C., that the Club would re-arrange the grouping of the Counties possessing less than 250 members, was carefully considered, but having in view the facts that a Committee has already been appointed to deal with this question, and that no change can be brought about in time for the election now pending, the Secretary was instructed to inform Mr. Lang that the request of his Association could not be immediately complied with, though it should be very carefully considered.

Comments upon the Agenda were received from the following absent Councillors:—Messrs. W. S. Phelps, Surrey; and J. A. Williamson, Tynemouth.

The next Council Meeting will be held at the "Colonnade" Hotel, Birmingham, on Saturday, the 8th December next.

Meets and Meetings.

NORTHUMBERLAND AND DURHAM DISTRICT ASSOCIATION.

The usual monthly meeting of the Committee was held at the Hotel Metropolé, Newcastle, on Wednesday, November 7th, Mr. Geo. Bartram occupying the chair. There were also present Messrs. P. M. Laws, J. M. Gibson and J. Wright (Newcastle), W. C. Brown and R. J. Smith (Sunderland), T. Philipson (Stocksfield), Dr. A. W. Blacklock (Gateshead), and R. T. Lang (South Shields), hon. sec.

The Railway Company, having given a favourable reply to the request of the Committee that some means of reducing the number of foot-passengers in the roadway of the High Level Bridge might be applied, Mr. Wright promised to take the matter up personally with the local manager, with a view to bringing it to a satisfactory conclusion.

The circumstances of the interference of the Talkin Tarn gatekeeper with a member of the club having received the close attention of the Northern Superintendent of the N.E.R. lines, it was agreed to take no further action in the matter.

Mr. J. B. Clark tendered his resignation of his seat on the Committee, which was accepted with regret. Mr. W. Olliff was elected to the vacancy.

It was decided to hold a dinner open to members and friends in the last fortnight in January. It was agreed that the cost of the tickets should not exceed four shillings, and the hon. sec. was instructed to obtain full particulars as to tariffs, &c., and submit same to the next meeting.

The "Universal Lights" bye-law proposed in the Durham County Council had received strong support from the Committee, and many of the Councillors had been written to, asking for their support, and favourable replies received.

The next meeting was fixed to take place at the "Three Tuns" Hotel, Durham, on December 5th, at 7.45 p.m.

It was decided to publish a letter in the Northumbrian press calling upon candidates for the new Parish Councils to support the proposal for "Universal Lights" in the county.

It was agreed to ask Mr. Williamson to place a motion in the agenda for the next Council Meeting requesting the Council to appoint a separate Editor to proceed with Vol. III. of the Road Book at once.

At the same time the hon. sec. was instructed to draw the attention of the Council to the method of grouping the counties with less than 250 members, for representation, and to suggest that counties in juxtaposition be combined.

For instance, Northumberland, Cumberland and Westmoreland total 256 members, and could thus have one representative resident within their boundaries, who would, naturally, understand their requirements better than one resident perhaps, some hundreds of miles away.

Letters of regret for non-attendance were read from Messrs. H. G. T. Barningham, J. I. Heslop, Geo. Watson, and J. A. Williamson.

A number of matters of lesser importance concluded a lengthy meeting.

Notes on the Stanley Show.

By C. W. Brown.

Once more has the whirligig of time brought us to the Stanley Show, and again has the work of criticising the exhibits been entrusted me. In this article I shall act upon the thoroughly impartial and straightforward policy I have adopted in former years, and shall consider the various exhibits from the practical point of view of the average road-rider, stating my opinion of them fearlessly, whether they be shown by large or small firms.

I have in the past been accused of prejudice and of unduly "slating" this or that invention just because it happened to be new, but in spite of my opponents I may reiterate the remark I made in prefacing my last year's article, to the effect that time has been very kind to me with reference to my previous criticisms. More especially did I feel this when I surveyed the Stanley Show of 1894, and thought of the first article I penned on the construction of the safety bicycle, which article appeared in the *Gazette* as long ago as 1888. In that I advocated the undropped handle-bar which was a feature on so many of the stands at the recent show, while the adoption of large chain-wheels, which I have been urging for years, is rapidly becoming an accomplished fact. Signs too are not wanting to indicate that bearings will in a year or two be enlarged, while many are even now constructed upon the dust-proof principle. Again, the "Humber" pattern crank-bracket, which I strongly advocated long since, is becoming more and more universal; the front-driver is rapidly going out of the market—only two specimens of this type of cycle were exhibited this year; spring-frames have almost disappeared; while detachable gear-wheels are the rule and not the exception. Yes, I have cause to look back with pleasure upon my past utterances! It is also perhaps worthy of passing comment that the London wheel journal, which is never tired of "slating" me and the Club, has recently climbed down with reference to its support of the "Boudard" gear, although perhaps its early error may be excused by reason of its possessing probably the most unpractical staff of any cycling paper in the kingdom.

I shall in the following notes treat each class of machine separately, and intend as far as possible to deal with all the exhibits of importance, but as the time at my disposal is very short—some two days to see and consider everything—I may possibly omit some minor novelty. If this is so I shall treat of it in my National Show notes.

Of the general design of the ordinary rear-driving safety but little need be said. The straight-tubed "Humber" frame is absolutely universal, and I did not see a single machine in the show with a curved diagonal. Front forks are still of various curves, but I opine that the nearly straight pattern adopted by the Whitworth Co. will eventually become general. There is no doubt that this fork is far steadier in the steering than those which are curved to an abnormal and totally unnecessary extent. Of course the straighter pattern involves a slight lengthening of the tubes of the frame, but there is undoubtedly less cross strain on the head, an item of great importance.

Large tubes are everywhere to be seen, and no doubt they are an improvement, and give a better appearance to the machines, but at the same time it should be remembered that they may be made too large. I think that one inch main tubes will be found about right for singles. Several machines have ⅞in. rear fork-legs, but this size hardly gives sufficient clearance for the crank in many cases, unless of course the "Referee" system of carrying the fork ends on the outer sides of the tubes and ending the latter at a bridge behind the crank-bracket, connected therewith by two short tubes placed more centrally in order to clear the gear wheel, is adopted. I believe, however, in rear forks with centrally

trapped ends, except in those few cases where the size of the hub chain-wheel, or some peculiarity of the frame, render side-trapping or separate ends necessary. A good many safeties were fitted with the swinging back slot adjustment to the chains which is usually identified with Messrs. Humber and Co.'s machines. It is certainly a neat device, but by no means essential to a first-class safety. Many machines were fitted with very light chains—too light in fact—but on those with gear-cases—and no first-class cycle is complete without—and large chain-wheels, I think that a ¼in. block will be found wide enough, for large gear-wheels undoubtedly greatly reduce the strain upon the chain. By the way, I may here remark that many people who are said to have tried large wheels, and to have found no benefit, have really only tested the difference between a seven and an eight-toothed wheel, a variation too small to be very appreciable. The man who airs his views after such an inadequate trial only displays his ignorance of the subject. While on this old question I may dispose of the argument advanced by the few firms which still fit small chain-wheels, which is to the effect that if there are more links and more teeth, there is more friction. This is not the case, for it must be remembered that the friction of solids is governed by the load—in this case the strain on the chain—and is independent of surface. Again, the gearing may be arrived at by the size of the crank-wheel, independent of the number of teeth. Thus, supposing that a hub chain-wheel has fourteen teeth, and that the diameter of the driving wheel is 28in., it is not necessary to employ a crank-wheel with twenty-eight teeth in order to gear the machine to 56in., for a chain-wheel of this size may have every other tooth removed, leaving only fourteen, and the gearing will still be 56in. Dan Albone adopts this plan on his "Ivel No. 4," and it appears to answer well, but I fancy that there may be slightly more risk of the chain running off the wheel in practice. However, the "Ivel"—I have personally tested the machine—runs remarkably smoothly, and is not at all ugly, in spite of the large crank-axle wheel. The accompanying block shows this machine without a gear case—the latter would of course be open in the centre—and displays, perhaps, the limit of large chain-wheels.

Tangent wheels are evidently the pattern of the future, and there can be no doubt that they offer many advantages, being, I am convinced, stronger, weight for weight, than the direct pattern.

The great fault I have to find with many of the safeties of to-day is the absurdly narrow tread; often so narrow as to involve a certain amount of weakness, and undoubtedly greatly reducing the wearing powers of the crank-bracket. I believe that a 6in. tread is narrow enough for most people, and that 5½in. will suit even short men. Think of the matter for a moment. Very few people in walking place their feet so near together as they are expected to do on the modern safety, and it must be further remembered that in walking there is no saddle peak to be considered. No discomfort or loss of power will be found in the use of a moderate tread, while the wearing capabilities of the crank-bracket will be greatly increased. It is the racing men who are probably responsible for the narrow tread mania, but half of them do not understand the question at all, nor yet the merest mechanical trifles connected with the bicycle; if they did we should not see men starting in twenty-four hours races with chains as tight as belting, as more than one celebrated rider did in the last Cuca Race.

I was pleased to note that most of the large firms are using bushes or liners inside the tubes of their best machines in those places subjected to great strain, a plan which greatly strengthens the junction with the lugs. One of the best methods I have seen is that employed by the Union Cycle Co., an American firm which only showed one machine, which was, by the way, one of the best safeties I have ever seen. The liners used by this company consist of four tapering feathers inside the tube and thickening towards the lugs. These feathers unite in the centre of the tubing, and the joint formed is immensely strong. The machine shown by the firm was a racer weighing twenty pounds, but fitted with no less than $\frac{1}{16}$in. balls to the rear hub and crank-bracket. The bearings were, moreover, protected by internal washers of felt, through which the oil has to filter before it reaches the balls, so that it cannot carry in any dust and dirt with it. The pin of the back hub is hollow, as is also the crank axle. The latter is fitted with a neat detachable gear-wheel and independent cranks. I have no patience with the method of making the chain wheel and crank in one piece, which is now generally adopted in this country. The system is thoroughly bad. The cranks of the "Union" are hollow, and are attached to the axle by a very neat plan. The bosses are provided with feather keys, which slide in corresponding grooves on the axle, and this latter, being hollow, is threaded inside and split about an inch down at each end. Into the ends tapered bolts screw, the action of which is to spread the axle tubing and so tighten and fix the cranks. The taper bolt screws flush with the crank-boss, and is furnished with a square hole in the centre to receive a key by which it is turned. The pedals of this machine are also better than usual, as the bearing next the crank is carried further out than customary, and is thus protected from dust by the front plate or blade. Even these small bearings are provided with the dust-proof washers, and adjust on the same principle as the "Humber" bracket. The Union Co. can teach our manufacturers a great deal in the matter of careful attention to details. No other machine in the entire Exhibition displayed the practical care and forethought evidenced in the design of the "foreign invader." The handle bar was, however, rather short and ugly, while the tubes of the frame were of slightly too small diameter.

Several neat methods of back fork adjustment were shown, but I certainly think that some plan to ensure the wheel being central should always be employed. Messrs. Roberts and Co., of the Crown Cycle Works, Birmingham, showed such a device, which seemed likely to answer well. It consisted of a small angular plate fitting round the rear wheel pin and provided with a number of small holes, which, as the wheel is pulled back, fit over a pin projecting from the fork end. The holes are numbered, so that both sides are easily adjusted evenly. If it is cut accurately it should meet all requirements in this particular. While on the matter of fork ends I may describe the Coventry Machinists' Co.'s new method of fixing the rear hub-spindle in the fork. Its object is neatness and lightness, as it does away with the usual nuts. The pin of the wheel is only just the width between the outsides of the fork ends, and on each end of it screws a cap, provided with a shoulder which rests against the fork ends. This cap is turned by an ordinary groove, like a screw. To fix the wheel in the forks, the bearing cones are screwed up till the bearings are tight, and then the caps on the ends of the pin are screwed up as much as possible. The bearing cones are then unscrewed as far as they can be, and so bind the pin to the fork. It is said that when the cones are tight enough to hold the axle in the fork ends, the bearing of the wheel is properly adjusted, but it is an arbitrary method which I would not have at any price.

The only variation in the usual pattern of frame designed for gentlemen is that of the Hart Cycle Co.'s "Majestic." In this the tubes from the rear fork ends to the saddle-lug are perpendicular, and are connected to the diagonal by a horizontal tube about nine inches in length, which carries at each end two short upright tubes in which the legs of the double L pin adjust. The front of the frame is of the usual type, and where the gain comes in I do not know. The handle-bar was abnormally curved, in fact cow-horned; and one pattern has an additional tube running straight across between the handles, thus making a double bar, the object being to form a luggage carrier. It looks like a plated towel-horse.

Of course the "Bamboo" bicycles attracted the attention of the curious. Twenty-five of these were shown, all of the "Humber" type of frame, the usual tubes being replaced by bamboo canes. These were, on some of the machines, fitted into extremely clumsy-looking lugs made of some composition to imitate wood, while others had the canes clipped by metal lugs tightened upon them by screws. The machines were atrociously ugly, the cane handle-bars, with natural knob handles like walking sticks, being simply dreadful. The frames are said to be "natural" spring ones, but I fancy this is a case of making the best of a bad job. Doubtless they would be more rigid if it were possible to make them so. Wood rims were fitted to most of these machines, but of course the spokes and working parts were of steel. The only merit seemed to be lightness, but even that is problematical, for the cycles were said to scale from 17lb. upwards, just as steel safeties do. One or two of the machines had cranks of bamboo. I am not at all sure whether I ought not to place the lot under the category of "fads."

Before leaving the bicycles constructed for gentlemen, and considering those specially built for ladies, I will briefly allude to the front drivers of the Show. One was the "Centric," which I fully described last year, and the other is a front-driving rear-steering machine, known as the "Crown." It is a fearful and wonderful contrivance, constructed as follows:--From a point some 10in. above the top of the front fork the backbone is carried to a head over the crown of the rear fork, which is raked forward as much as the front one is backward, and is slightly curved at its lower end to give a castor effect. From a point about 2in. above the front wheel a short tube is carried backward for some 6in., and then curved upward to the main backbone, which it bisects and continues upward for about 4in., the end forming a saddle pillar in which a T pin adjusts. From the crown of the front fork a short tube is carried forward about 6in., and is provided at its forward end with a ball socket, in which the handle-bar is swivelled, the lower stem of which is provided with short arms, which are connected by rods passing under the fork crown, to short arms on each side of the top of the rear fork. These rods are of course crossed to provide positive steering. I do not think that the machine will be of any practical use, and as it has independent cranks—the wheel being driven by a spur wheel at each end of the axle, gearing with the internal teeth of hollow discs attached to each crank—it needs no further consideration.

In safeties specially designed for the use of ladies but little real advance seems to have been made, although the number of these machines exhibited compared with former years was very surprising. The patterns varied considerably, but of those shown I certainly believe in the V style. Curved tubes are, I think, a mistake, although I admit that they do allow of more room for the dress.

Several of the machines had a large diameter lower main tube from the bottom of the head to the crank-bracket, which tube was curved and further stayed by a smaller one from the top of the head to the diagonal, the two being kept a little distance apart by two or three small struts. Another similar frame had the lower tube straight, and the upper one dropped from the top of the head to a point some 14in. down the lower one, to which it was attached by a lug, and then bent horizontally to the diagonal, the upper side being about level with the top of the gear case. This is no doubt stronger at the crank bracket than those patterns in which the upper tube is carried direct to the diagonal, close to the lower one, and also gives more room for the dress, but I certainly consider that the lower tube should be internally bushed under the ring-lug where the upper tube joins it, as there is considerable strain at this point.

Marriott & Cooper's lady's safety is much of this pattern, but the tube from the top of the head to the lug on the lower backbone is detachable at the latter point, and hinged at the head so that it can be raised to a horizontal position and attached to the saddle lug, should the machine be used by a gentleman, or should rational dress be adopted by the lady. One or two of the V-framed machines had a strut between the front tubes similar to that frequently employed in the curved pattern, and this undoubtedly greatly strengthens the front part of the frame. Another type of frame employed on the "Crown" lady's safety has the upper tube descending almost perpendicularly from the top of the head to a point on the lower main tube about 6in. behind the fork crown, where it is bent, and follows that tube for about a foot, the two being brazed together for that distance, when the upper one is bent horizontally to the diagonal, level with the top of the chain-wheel. Another modification of this was that shown by Humber, Synyer and Co., in which the upper tube descends in a sweeping curve to the diagonal, approaching to within an inch of the front main tube, which is straight, and connected therewith by two struts. The "Rudge" was also of this pattern, but only one strut in the centre was employed. Yet another pattern had the two front tubes carried respectively from the diagonal some 6in. above the crank-bracket, and from the latter to the bottom of the head, where they meet. This arrangement is, perhaps, strong at the crank-bracket, but is weak at the head, the rigidity of which depends entirely on the bottom lug and the brazing thereof.

The "Bard" presented a somewhat novel design, for in it the main tube was straight, but the upper front one was carried forward from the lower part of the diagonal until it was within about 2in. of the main tube, when it was curved upwards until it neared the head or steering pillar, to which it ran parallel up to the top, where it was attached to a short arm or lug projecting rearwards from the top centre. As this tube was not stayed in any way to the lower one, I did not think much of the design.

The "Trigwell" is another pattern rather out of the common, though I cannot say that I like it at all. The frame is entirely duplex (*i.e.*, parallel tubes throughout), and is constructed as follows:—A tube of small diameter descends from the bottom of the head to the crank-bracket, to the under side of which it is attached, and is then continued on to the rear wheel hub, thus forming one leg of the rear fork. Thence it is carried upwards to the saddle-lug, which it joins in the centre of a sweeping curve or arch, after which it descends to the upper side of the crank-bracket, where it curves sharply forward and upward to the top of the head. This arrangement is duplicated by a similar tube on the opposite side of the machine. The cycle looked rather like a camel, but it may possibly be rigid, though I never did believe in duplex frames. The "Ovalette" is also a novelty. It is constructed of flat duplex tubes ascending to each end of the crank-bracket from the bottom of the head, where they meet. The rear fork is also composed of flattened or oval tubes, as are the rear stays to the saddle-lug, but the diagonal is round. The curious part of the machine is an oval tube descending from the top of the head to the centre of the crank-bracket. The appearance of the machine is by no means bad, but I believe that the frame would be stronger if the tubes were round instead of oval.

Several of the machines had a short stay placed between

the upper front tube and the diagonal, and when this is not too high, I believe that it is an advantage, while it adds but little to the weight. One or two, however, had this stay too high, so that it rendered the machines only fitted for rational dress. By the way, I suppose I had better include the "Mohawk," designed for "the new woman," in this article. In this the upper front tube is carried from the top of the head to the centre of the diagonal. The "Referee" Cycle Co. also showed a lady's safety of similar pattern which was fitted with their patent head. One or two small diamond-framed machines specially built for ladies were shewn. They had 26in. and 28in. wheels, but there was nothing special about them, and I do not suppose that they will interest many of the ladies of the Club. The "Fairy Princess" of the Hart Cycle Co. embodied most of the firm's frame for gentlemen, but the front portion consists of a tube from the head to the crank-bracket, but curved downwards near the latter, while from the top of the head two tubes, one on each side, descend to the main tube, to which they are attached by ring-lugs, and thence follow the bottom curve to the bracket. The machine is fitted with a neat dress guard, which takes the form of doors at each side of the frame, so that it can be opened for cleaning purposes. The "Clyde" has a curious frame consisting of a tube running forward from the bracket and curved upwards and afterwards forward to the bottom of the head. From the top of the latter another tube descends, bisecting the first about six inches behind the head, and continuing downwards and backwards in a curve, to the under side of the crank-bracket. The tubes are stayed apart by three struts, but I think the weak spot is where they bisect. I preferred the "Vanguard," by Lunt, Wakefield & Mountford. In this duplex tubes run from each side of the crank-bracket to the bottom of the head, where they meet, and a third tube descends from the top of the latter and passes between them, being connected by lug-rings, and terminates at the under side of the crank-bracket. The "Enfield" lady's safety depends mainly upon a single lower tube at the bottom of the head, which is stayed to the diagonal by a short horizontal tube placed some six inches above the bracket, a tube from the top of the head being connected to the short piece about an inch behind the lower main tube. The "Lonsdale" lady's safety has the diagonal carried below the crank-axle for about five inches, the extension being stayed to the rear of the machine by tubes attached to short arms descending perpendicularly from the rear fork legs. The upper and lower front tubes join the diagonal at its lowest extremity, and at the crank-bracket respectively, and a short strut is placed between the upper one and the diagonal, six inches or so above the bracket. As there was no further stay between the two front tubes, I do not think that the machine will be more rigid than usual.

There were more tricycles at the Show than I expected to find, and it is evident that there is still a slight demand for these machines. I did not observe anything very startling in design. I much prefer what I may call, for want of a better name, the semi-pyramid frame, in which the diagonal, upper and lower front tubes and head are identical with those of a safety. In this pattern the tubes from the crank-bracket to the bridge—or better still, to the centre pair of bearings—are straight, and those from the saddle-lug to the bridge, spread apart at the bottom, say for about one foot. This arrangement insures lateral stability. On what may be styled the full pyramid, these rear tubes are carried to the extreme ends of the bridge, but this has two disadvantages, namely that the step-plates on the bridge have to be placed between them and so render mounting difficult, and that, unless these tubes be of fairly heavy gauge, the saddle-lug ought to be supported by a central perpendicular tube to the bridge. Several machines dispensed with double vertical tubes from the saddle, having one central tube of large diameter either direct to the bridge or else to the main backbone slightly in front thereof. This latter pattern is distinctly wrong, for it naturally places nearly the whole of the lateral strain of the machine upon the short piece of the main backbone between the perpendicular tube and the bridge. The former pattern is to be preferred, but for tall riders I am of opinion that the central vertical tube should be stayed on each side by short struts to the bridge.

On most of the tricycles the chain was central, but notwithstanding that from a theoretical point of view this position is correct, it has the great practical disadvantage of necessitating independent bearings to the crank axle, a fault which renders accurate adjustment difficult, not to say impossible, to the average rider. From a practical point of view, therefore, I prefer the chain slightly out of the centre of the machine, the cross strain upon the crank-bracket involved by this position being corrected by a dished gear-wheel, deep enough to place the pull of the chain well between the ball-races. The adoption of this bracket enables a single adjustment to be used, so that both bearings may be equally tightened. With regard to the chain adjustment of tricycles, I should always recommend either an eccentric arrangement to the front cranket or a swinging motion to the latter in preference to the bodily shifting of the axle and rear portion of the frame, as generally used. I think this is less complicated, while the centre of gravity of the machine is hardly altered at all by it. The bearings of the majority of the tricycles were too small, but one or two machines had fairly large balls. The form of axle inside the bridge adopted by the Whitworth Co. and one or two other firms has a neat appearance, but I think that the ball-races—of course I could only judge by outside measurement—must be rather small. The adjustment of this form of axle is, however, very easy.

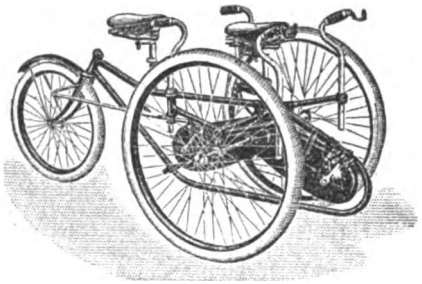
Marriott & Cooper's "Ripley" tricycle for a lady or gentleman followed the lines of their lady's safety with movable stay, and seemed an excellent machine. The "Hadley" tricycle shown was of the semi-pyramid type, but the rear tubes of the frame and the diagonal were duplex. Like most of the tricycles the chain adjustment was done by means of telescopic tubes or back stays between the crank-bracket and the axle, which when lengthened swung the main axle back. The "Muswell" had a somewhat similar frame, but the perpendicular rear tubes were not spread. Another pattern on the same stand as the latter, designed with a detachable top stay so that it may be used by a lady, had a single large tube backbone straight from the bridge to the lug, from which the swinging crank-bracket was suspended, and then curved upward to the bottom of the head. The funny part about this machine is a small upper tube closely following the curve of the main tube, and about 1in. above it, and stayed thereto by three struts terminated by joining the main tube just behind the crank-bracket. I don't think that this adds much to the strength of the machine.

The "Referee" tricycle is designed for either a gentleman or a rationally-dressed lady, and is of the pyramid form, but has the upper front tube carried from the top of the head to a point half way down the diagonal.

It should be noticed in reference to the tricycles that large gear-wheels have yet to be applied to them.

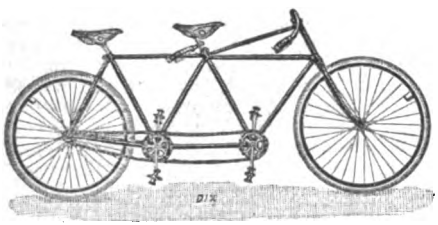
Tandem tricycles were few and far between. One or two were of the usual front-steering type with both the riders in front of the axle. Marriott & Cooper's "Olympia" was much the same as heretofore, and there were two or three patterns of the rear-steering tandems, which are particularly suited for a lady to occupy the front seat, and for quiet riding. Of these I still prefer the "Pollard," wherein the frame is continued in a curve after passing the front crank-bracket, running thence parallel with the ground to the rear bracket, and then ascending to the back wheel head. The frame has been further stayed at the sides, which is an improvement. On one pattern handle-bar steering by means of bringing the rack rod centrally along the backbone to a

pinion wheel at the bottom of the rear handle-bar stem is adopted. This is a great point, as it leaves the rear rider free to dismount on either side.



Two quadricycle tandems were shown, one by Robinson and Millward, fitted with a Bath chair in front, and the other by Rudge & Co., or rather Rudge-Whitworth. At one time I rather fancied the Quadricycle Tandem turned out by the Rudge Co., but I had such a terrible experience of one which was specially built for a friend of mine last spring, that I was entirely disillusioned. The details of that machine when it arrived were truly awful. The pedal pins were fitted into round holes in the cranks, so that it was impossible to tighten them up without first taking the pedal off the pin and holding the latter with a powerful pair of pliers, as otherwise the pin simply twisted round in the crank when the nut was turned by the spanner. In addition to this the stays between the crank axles were a constant source of anxiety, and the machine was sent out in such a condition that it constantly shed nuts and bolts, until I spent some hours in thoroughly overhauling it. This might, of course, have been an accident and the exception, but I can hardly think it was, as when I mentioned the matter to Mr. Philpot, who was then with Messrs. Rudge & Co., he only said, "Well, if the nuts come lose you should screw them up." After this experience I am having no more machines of this kind.

One of the most remarkable features of this year's Stanley Show was the immense number of tandem safeties exhibited, nearly every maker of any note having one or two specimens of this type of cycle. Many of the frames were weak, but I was pleased to note that it was quite the exception to come across one in which the rhomboid formed by the two diagonals, the upper tubes between the saddle-lugs, and the lower tube or tubes between the crank-brackets, was not stayed either obliquely by a cross diagonal from the front saddle-lug to the rear crank-bracket, or horizontally by a third main tube or backbone running from the bottom of the head to a point in the rear diagonal some eight inches below the saddle-lug, bisecting the front diagonal in its course. I must say that personally I prefer the former method of a cross diagonal, but when it is used, the front of the machine should certainly be stayed from the bottom of the head to the front saddle-lug, as in Thomson & James's "Mohawk," tandem shown below, or else by an additional tube from the



top of the head to the front crank-bracket, as in the "Rudge." Of the two I prefer the "Mohawk" design. This machine is a very excellent tandem for two gentlemen, being fitted with large bearings, a point wherein the majority of the tandem safeties fail. Many of the smaller makers showed tandem safeties with hanging front brackets attached to a lug holding the duplex parallel tubes usually employed between the crank axle, and the lower front or backbone to the head. This lug was in nearly every case lamentably weak, and as several makers showed machines with exactly the same defect, I expect it is a pattern of either malleable casting or a stamping supplied to the trade by one of the wholesale parts manufacturers. I would warn all intending purchasers to carefully examine this important lug, should they decide upon a machine with a swinging crank-bracket in front, for the point where the tubes referred to meet is one of the weakest parts of a tandem safety. I am sorry to say that many of the heads and fork crowns are still very far from strong enough, and I certainly think that no tandem of this class should be made with less than three crown plates, and even then these should be sleeved and the forks bushed inside for some distance down the blades. The steering pillar should also be bushed from the bottom plate of the fork crown to a point at least two-thirds up the head. Having in view the accidents which have occurred during the past season, owing to the front forks and heads of tandems breaking, great care should be exercised in choosing such a machine. The head and front fork must be strong, even if it adds a little to the weight. The "Engineer" tandem has a double ball bearing to the bottom of the head to relieve the strain at this point. The head is of the ordinary type, except that outside the bottom lug where it bulges to fit over the internal ball-race is placed a hardened ring forming another ball-race, a cap containing a similar ring or cup screwing down on the bottom of the steering tube, and thus tightening the outer row of balls. In spite of this double bearing the head is very neat in appearance.

The Cycle Gear Co., of Coventry, are also very particular about the heads and forks of their tandems, but I did not like the firm's machine for a lady and gentleman at all. From the top of the steering post an arm some 14in. in length projects to the right of the machine, and is coupled at its extremity to the end of the rear handle-bar, which is, of course, swivelled in a ball-bearing socket, like every other double-steering tandem. The front handle-bar is swivelled upon a short tube or continuation of the steering pillar above the long arm referred to, so that the front rider has no control over the machine. I do not believe in any tandem safety steered from the back, in which the front rider's handle-bar does not move with the front wheel. Single steering from the front is all very well, for the rear rider is not thrown so much outside the wheel-base in a sudden swerve, but when the non-steerer is in front, balancing the machine is difficult and tiring, unless he or she has an inkling of which way the front wheel is being moved, and the best way of conveying this information automatically is by allowing the front handle-bar to move in conjunction with the wheel. I was simply astonished to see that the old method of coupling the ends of the handle-bars on tandems designed for a lady and gentleman is still employed by a few firms. It is a clumsy and dangerous device, doing away with the advantages of the open frame on one side at least, and seriously enclosing the front rider in case of an accident. I would strongly warn anybody against purchasing a double-steering tandem coupled in this manner; the steering connections should always be central, and there should always be two, one on each side.

Most of the tandems designed for a lady in front were much of the same pattern as the ladies' safeties manufactured by the same firms. The "Referee" tandem, for instance, was evidently for rational dress, the upper front tube being joined to the front diagonal about half-way up. Marriott and Cooper's tandem, and one or two others of kindred pattern, had a detachable stay to convert it into a machine for two gentlemen. The "Whitworth" tandem seemed to me to be

a very good one for a lady and gentleman. In this the head and rear diagonal leans backwards at the same angle, but the front diagonal has more rearward rake, the object being to place the front saddle—the pin of which clips round this tube, and so has almost unlimited adjustment—further back than would otherwise be possible. This is a great point, as most of the front saddles of tandems are much too vertical for a lady. The lower front tube is carried from the bottom of the head to the crank-bracket, and the upper bisects the diagonal some six inches above this, and is continued backward and downward to the lower duplex horizontal tubes. At the point in this diagonal where the tube crosses, is a strong lug, slotted at each side, to allow of short arms to project outwards from the inner steering post of the rear handle-bar. These arms are connected to the front fork crown by tubular telescopic rods, terminating in round knobs or balls, fitting into small cups on the ends of the short arms, and the sides of the fork crown. It will be seen that by lengthening these tubes by screwing out the telescopic parts, which are fastened by lock-nuts, the balls will be pressed tightly against the cups, and any shake that may arise may be taken up from time to time. The steering arrangement is, of course, a compression one. I prefer the very neat steering on the Coventry Machinists' Co.'s new tandem, which is the same, except that instead of tubes wires in tension are employed, these wires being tensioned by barrel nuts screwing on left and right-handed threads. This is neater and better than coupling tubes.

The "Clyde" tandem for a lady and gentleman had the position of the usual cross diagonal reversed. In this machine it passes from the rear saddle-lug to a point in the front diagonal, about six inches above the front crank-bracket, and immediately behind the junction of the upper front tube from the top of the head. It is claimed that this arrangement strengthens the front of the frame, but seeing that the two front tubes are not affected by it, I do not know how it can possibly do so. The machine had, however, plenty of room between the riders, a point which is apparently lost sight of by the designers of a good many tandem safeties.

Several tandems had the egregious error of having the chains on opposite sides, thus placing a double cross strain upon the rear crank-bracket. Of course these machines are entirely unworthy of further consideration. Many of the front chains were placed outside the rear ones, and although from a strictly theoretical view this does reduce the cross strain upon the rear bracket to a certain extent, the gain is more thon lost in practice by the widening of the front tread, which, when above certain reasonable limits, puts more strain upon the front bracket, which is one of the weakest parts of a tandem safety. Therefore the front chain should be inside the rear one, and its rear wheel should be a ring made in one piece with the front gear-wheel of the rear chain. This ring allows the rear bracket to be carried under it, and thus enables the ball-races to be placed as favourably relatively to the large chain wheel, as on a single safety. One of the worst arrangements that I have ever seen is the "Arab" single chain tandem, in which the chain is carried straight to the front chain-wheel, engaging the top and bottom of the rear crank-wheel as it passes. Of course both gear-wheels must be the same size, and so it follows that the pull of the chain from the front crank-bracket would cause it to be liable to leave the rear crank-wheel at the top, while the sag at the bottom would prevent it remaining in gear with the lower teeth. To overcome these difficulties two small six-toothed loose wheels, running on ball bearings, are attached to arms from the rear fork behind, and the frame in front of the rear crank chain-wheel, the former pushing the chain between the crank-wheel and the hub upward, and the latter depressing the chain below the plane of the peripheries of the crank axle gear-wheels. It is obvious that the power exerted by the front rider will first tend to pull the small pinion wheel on top of the chain upward, and when this is resisted by the bearing, it will then drive the rear crank-wheel. This arrangement is simply ridiculous.

Two single-steering tandems designed for a lady to ride behind were shown. That of the London Cycle Manufacturing Co. is of the same pattern as a tandem for two gentlemen so far as the front portion was concerned. The frame has the usual duplex tubes between the crank-brackets, but in addition to these there is a third tube placed centrally a little above them, which additional tube bisects the front diagonal and then ascends to the head, which it joins some two inches above the lower front tube. The top tube between the saddle-lugs is dispensed with, but a cross diagonal descends from the front saddle to the lower part of the rear diagonal, which it joins at the juncture of the extra central tube already referred to. Between this cross stay and the rear diagonal, another short tube is placed, the latter being some twelve inches above the rear crank-bracket, a height which renders the machine only suitable for the rational dress. The front chain is in the centre of the machine between the two lower tubes, a position which entails the disadvantage of independent bearings to both the crank axles. The other tandem of this type — the "Burley" I think, — also had the stay between the cross and rear diagonals too high up to admit of the ordinary dress, but the chains were at the side. The central chain defect was apparent in the tandem shown by Messrs. Humber, Synyer & Co., the diagonals of which descended to two hollow discs or flat round boxes through which the crank axles passed. On each side of these discs ran the main horizontal tubes of the frame, and inside were the gear wheels of the front chain. The adjustment was eccentric, and a neat scale was shown on each bearing, so that there might be no difficulty in getting the axles parallel. This does not, however, get over the bearing adjustment difficulty. The object of the arrangement was, of course, to obtain a narrower tread at the back, both crank axles being the same length, namely 4¾ in.

Messrs. Poole & Co. exhibited the "Interchangeable" tandem safety, in which a rear portion of a tandem is fixed to the fork ends and saddle-lug of an ordinary safety after the back wheel has been removed. The great fault is that the chains are on opposite sides, and that like all convertible machines, it is either too heavy for comfort as a single, or else too light for strength as a double. I described this machine last year, so will merely remark that a triplet may be made by adding much the same connection to the back of a tandem.

By the way, three or four triplets were shown, but they are hardly likely to interest the majority of road-riding cyclists, who will probably agree with the old saying to the effect that "two's company, three's none." All these machines were much the same in details as the tandems, but, of course, the heads and front forks require to be even stronger, and the bearings should be somewhat larger. One bicycle for four riders, one before the other, was shown, but considering its length, the strain upon the frame must be simply terrific.

One of the best eccentric adjustments I saw was that of the Leicester Cycle Co.'s "Peregrine" tandem. In this the outer barrel was not of the usual clamping kind, but was slotted down the middle in front, each side of the slot being provided with a number of small teeth, projecting outwards at right angles to the barrel. Through this slot a strong bolt attached to the crank-axle barrel passed, and was provided with a thread and nut, which pressed a small washer, having corresponding teeth to those on the eccentric barrel, home, and so locked the eccentric crank-bracket in position. The device is very neat indeed.

Spring frames are evidently not much sought after, only two or three specimens being exhibited. These were by no means good, the "Cremorne," for instance, depending for

lateral stability upon the hinge of the rear fork where it joins the crank-bracket. The tubes from the saddle-lug to the rear fork ends were divided, and kept apart by big spiral springs, but as there were no guides to hold the frame sideways, I should not care to trust it. I prefer the "Helix" frame, which I have described in previous Show notes, but I do not care for any cycle of this type.

Of course our old friend the chainless safety with bevelled gear was trotted out once more, this time by a new inventor, and one or two others, notably the "Stevenson," were also shown. In this latter machine the gearing consisted of a small spur wheel attached to the crank axle in the centre of the bracket—which is made in box form, and large enough to cover the whole of the gearing—a small intermediate loose wheel, and a still smaller one in the centre of a secondary axle, which is placed behind the crank-axle proper. The ends of this axle are either fitted with short cranks coupled by rods to smaller ones on the rear hub spindle—a plan which necessitates outside bearings in the rear fork ends; a very grave error indeed—or else one end carries a chain-wheel geared on to the hub by the ordinary chain, after the "Boudard" pattern. The small gear wheels in the crank-bracket have the teeth cut obliquely, a plan which is said to reduce friction—as if that mattered in a modern cycle gear!—but which puts more strain on the bearings of the central loose wheel. Messrs. Humber, Synyer & Co. showed a machine with apparently a similar gear.

A novel chainless safety was exhibited by Hann & Bromley. This had the usual cranks on the ends of the hub spindle—like the "Loco." described last year—to which rods are attached, the opposite ends of which are connected to right-angle arms, one of which takes a bearing at its angle immediately behind the diagonal some 2in. above the rear fork, and the other occupying a similar position beneath the fork legs. The other ends of these arms are provided with small steel rollers, which engage in a path cut in the side of a cam disc, which is keyed to the crank axle in place of the ordinary chain-wheel. This disc may be made with either two or three throws, the former naturally gearing the rear wheel of the machine exactly double, and the latter treble. As the cam disc—the machine shown had a three-throw one—is turned, the ends of the tumbler cranks are pulled up and down, as the roller follows the cam path, and thus impart an alternate pulling and pushing motion to the opposite ends, carrying the coupling rods by which the machine is driven. The device is by far the cleverest arrangement for dispensing with the chain I have as yet seen, but I fear there will be a difficulty in getting the rollers to run smoothly in the cams, there being a tendency to jerk as the motion is reversed. Furthur, I am not sure about the increase of friction, but the machine is the only chainless safety I should like to experiment with. It has the usual disadvantage of independent bearings to the rear wheel, but this could be got over if the gearing proved worth the trouble, but the disadvantage of either exactly double or treble gearing—by which the driving strain is always on the same part of the wheel—will always remain.

Of the compound gears, that is, those which are said to enable high speeds to be attained with but little labour, the "Boudard" attracted most attention. I can only refer my readers to my original description of this gear, appearing on page 33 of the January *Gazette* this year. I have tried the gear during the season, and see no reason to alter my opinion of it, for I have found it no better than an ordinary chain gear, and not so good as a machine fitted with large gear-wheels. The duplex cross strain upon its secondary axle could be removed by placing that axle in front instead of behind the crank axle, for the natural spreading action of the internal teeth would then be backwards, *i.e.*, in the same direction as the pull of the chain, so that the strain upon the bearing would at any rate be even, and not across. I pointed this out at the last Show, and Messrs. Humber & Co. employed this method on their racing tandem. Nevertheless I do not believe in the "Boudard," or any other compound gear yet produced.

The "Push Easy" gear of the Leicester Cycle Co. may be described as the "Boudard" reversed. The chain wheels were approximately of the same size—slight modifications in the actual gear of the machine being arrived at by varying the number of teeth in the ordinary way—but the rear one is not attached to the hub, but takes a bearing on a ring of balls sufficiently large to enable the hub-pin to pass to the fork ends eccentrically from the chain-wheel centre, by at least an inch. The chain-wheel bearing ring is held in the rear fork leg—which is itself forked again on each side of the gear—by a pin placed just as eccentrically at the opposite side of the bearing ring as the hub-pin. The chain-wheel is a hollow disc having internal teeth on its inner periphery, just as the "Boudard" crank-wheel, which gear into corresponding teeth on the rear wheel hub, which is by this means geared a little more than double. The amount of this gearing may, however, be altered by varying the number of internal teeth. In this gear the hub pinion wheel is at the back of the chain-wheel centre. The "Veresy" gear of the London Cycle Manufacturing Co. is much the same, but is, I think, neater, and further has the advantage of being easily fitted to any existing machine. The hub pinion wheel is in this case in front of the centre of the chain-wheel, and the ring bearing of the latter is held in the usual fork end slot by a square shouldered pin, thus dispensing with the necessity for a small fork on the rear fork leg. Another gear was "Knowles's," which was practically the balance gear of a tricycle. The hub was a large barrel, into one end of which a bevelled toothed wheel attached to the main chain-wheel, which had fifteen teeth, projected. The chain-wheel itself took an independent bearing on the pin of the hub, which bearing had separate adjustment, the same as the gears just described. The opposite end of the barrel was closed, but had inside a similar bevelled wheel to that on the chain-wheel. On the fixed pin were two short arms, projecting at right angles to it on either side, and carrying small spur-wheels, which geared with the bevelled wheels on the hub and chain-wheel. The effect of this is to, of course, gear the hub exactly double, extra speeding being arrived at by means of the ordinary chain method. I may here remark that the "Centric" gear described in my last notes is similarly applied to a rear-driving safety, ordinary chain gearing connecting it with the crank-axle.

The object of all these gears is to provide large wheels on the hub, and so reduce the strain on the chain without increasing the diameter of the crank-axle chain-wheel, thereby retaining the crank leverage upon the latter. The friction of the internal gear and its extra complication of course does not count—that only comes in in actual riding!

The "Spring Chain Wheel" is another thing about which opinions differ. I can personally find no benefit in it—only a loss on hills—after an extended trial with both the old and new patterns. I may say that the man in charge of the stand, who was disguised as a gentleman, called me "either a knave or a fool," when I said that I could not get any extra power or speed out of the contrivance. Nevertheless, it is, I am sure, of no value to the man who can properly ride a cycle and who really uses his ankles. The man who only sits on a bicycle and propels it by brute force, may possibly find its jerky uneven action compatible with his own clumsy movements, but I do not think that even he will in the long run benefit by its use. I refer my readers to page 34 of the *Gazette* for January last for a full description of the contrivance, and will only remark that I have in no way changed my opinion therein expressed. The only alteration that has been made in the wheel is that it is now fitted with ball bearings.

Another contrivance of much the same kind—only worse, for it is more exposed to dust—is the "Speed Wheel." In this the hub flanges are not really attached to the hub, but

run on bearings thereon, the chain-wheel being attached to the main barrel, from the centre of which, between the spokes, project eight arms, which are connected to the rim by wires running at right angles from the ends. These wires are divided, and coupled by spiral springs, capable of adjustment. The attendant said that when you wanted the best speed the wheel is capable of, you tighten the springs—thereby making the wheel as nearly like the ordinary rigid kind as possible—and I see no cause to doubt his statement.

There are several minor things which I should much like to mention, but which the short time at my disposal compels me to leave over till next month, when I shall incorporate them in my National Show notes. I must, however, refer to the "Pneumatic Brake," which seems to me—always supposing that its wearing capabilities are all right, and I see no reason why they should not be—to be a very excellent thing. It can be either attached to the front or rear wheel, and it should be noted that when on the latter—which is the right place for the brake—it involves no extra complications. The brake consists of two flat steel arms, clipping round either the forks at the head of the machine, if it be used on the front wheel, or else on the rear tubes to the saddle-lug, just above the rear wheel tyre, or to the rear forks just below the crank bracket, if it is on the rear wheel. I prefer this latter position. The arms are connected by a short bolt at their extremities, to which is clipped a semi-circular shield. Inside this is fastened an oblong rubber chamber, having a thick front face with strong longitudinal ribs. When empty the natural contraction of the rubber withdraws this face within the shield or back, but through the latter passes a very small rubber tube, passing under the lower backbone of the frame—if the brake be at the crank-bracket—being held thereto by neat clips, and thence to the handle-bar, where it terminates with a pneumatic ball, provided with a non-return valve, by which the brake chamber is inflated and so pressed on the tyre. One squeeze will put the brake on, and two or three will absolutely lock the wheel, while the brake is automatically held on by the valve, until the thumb depresses a tiny button placed at the junction of the air tube with the pneumatic ball, when the air escapes, and the brake is taken off at once, owing to the air chamber collapsing into its metal shield. The weight is only ten and a-half ounces.

Wood rims abound on the various part stands, but not so many appeared on the machines exhibited. I must leave these, and parts generally, till my next article. Accessories will also have to be held over, as a great many small things are worthy of notice.

Taken as a whole the Stanley Show of 1894 was a most excellent one. Fads there were, as, for example, Count Rosseti's so-called fly-wheel—which really only consists of weighting the rear wheel of an ordinary safety with a heavy inner rim and four heavy central spokes attached rigidly to the hub, and the same gentleman's saddle, which was supported on wires wound over pulleys on the head, crank-bracket, fork-ends, and on a special scaffolding over the rear wheel—but many of the novelties were more or less practical, and taking all things into consideration, cyclists have good cause to be pleased with the progress which has been made during the last twelve months.

THE CYCLIST BISCUIT.—A few weeks since, ere the legacy left by a third attack of influenza permitted our return to a normal diet, we were gratified to receive at the hands of Messrs. McVitie & Price, of Gorgie Road, Edinburgh, a sample box of a new biscuit they have recently put upon the market. This biscuit is described as being "essentially a bone and muscle forming article, made of English wheat flour, fine Scotch oatmeal, and a considerable percentage of extract of beef." It is a palatable addition to our list of comestibles, of particular value to the cyclist, and we predict for it a large and ready sale.

Multum in Parvo.

THE RENEWAL OF SUBSCRIPTIONS is now in order. Ladies and gentlemen, we are waiting to hear from you with the needful 3s. 6d.

* * *

CONGRATULATIONS.—Mr. J. W. Mayfield, of Hull—long time one of the R.C.'s for Yorks., and later the Chief Consul of the Riding—is the latest to enlist in the matrimonial army. We wish him and his bride every happiness.

* * *

TO MEMBERS IN MODERN ATHENS. — An Edinburgh member (an amateur flautist), possessing Boehm flute, wishes to meet with another active member, preferably an amateur flautist also, for mutual practice and improvement. No. 13,123, c/o the Editor.

* * *

A WORD OF APOLOGY.—The November *Gazette* was unavoidably late in appearing owing to the fact that the editor was laid aside by sickness; the current issue is similarly delayed so that the reports upon the Stanley Show may be included. We hope, however, to turn over a new leaf with the New Year.

* * *

"SAUCE FOR THE GOOSE IS SAUCE FOR THE GANDER."—After reading, as one does at this time of the year, in the daily press numberless accounts of cyclists being fined for riding without a light, it is quite refreshing to come upon such a cutting as this:—"DRIVING WITHOUT LIGHTS.—At Paisley J.P. Court yesterday, John Aitken, jun., farmer, Foxbar, near Elderslie, was convicted of having, on the night of 25th October, driven a spring van on the road between Paisley and Elderslie, without having lights on the vehicle. In the evidence it was stated that Aitken had run into a hawker's van, breaking a lamp and a spring. Accused was fined in the full penalty of £2, including expenses, or ten days' imprisonment."—*Glasgow Herald, 3rd November, 1894.* [It will be recollected that in the Paisley district lights are compulsory upon all vehicles with springs.]

* * *

SIGNS OF THE TIMES.—The revolution which the pneumatic tyre is destined to work is not confined to the cycle trade, for more than one of the leading tyre companies have completed arrangements whereby they are now in a position to furnish tyres for all light vehicles, broughams and landaus included. There cannot be a question as to the luxurious mode of travel the pneumatic provides wherever it is employed, and this being so we conceive that we were conferring a benefit on horses and horse owners by reproducing, as we did in the last issue, a paper recently read before, and unanimously approved by, the Institute of British Carriage Manufacturers. To all who are fortunate enough to possess the means by which to acquire them we cordially advise the adoption of pneumatic tyres upon carriages of every description. The Prince of Wales has already invested in them, and as these tyres are now—for obvious reasons—even more defendable upon carriages than upon cycles there is no reason why the general public should not follow his excellent example. The Pneumatic Tyre Company guarantee their manufactures for twelve months, and we commend their new and descriptive catalogue to the notice of every horse owner.

THANKS, MANY.—The cycle noter of the *Waterford News* bemoans the fact that the C.T.C. has so few members in his county, and strongly recommends his readers to apply for membership.

* * *

FINGER POSTS AND MILESTONES.—Cyclists have a friend at court in the person of Mr. E. L. Wallis, of Hereford, for at a recent meeting of the Hereford County Council, of which—as well as of the C.T.C.—he is a member, that gentleman moved that attention be directed to the necessity of remedying the deficiencies observable in the milestones and finger posts in that district.

* * *

THAT CYCLE TAX.—The Shropshire Chamber of Agriculture is the latest body to agitate for the imposition of a five shilling tax on cyclists. We notice, however, that Lord Rosebery, to whom the memorial was addressed, contents himself with formally acknowledging that the communication has reached him. There be occasions when silence is eloquence. Let us hope that this is one of them.

* * *

THE NEW HOTEL SYSTEM.—A well-known and indefatigable tourist who has for years resided in the Lake District, and who was at one time Chief Consul thereof, says anent the New Hotel System :—"I am afraid in this district the new arrangements will result in an enlargement of the tourists' bills unless the hotel proprietors are carefully approached. The present tariff is from 30 to 40 per cent. under the usual one, so a discount of even 25 per cent. would be a loss to us." This is the testimony of a practical man and a veteran to boot, though it reads strangely by the side of the narrative of "the Pioneer Cyclist," who saved "the munificent sum of 10d." in the short space of a month through being a member of the C.T.C.

* * *

THE LIABILITY OF INNKEEPERS.—The responsibilities of innkeepers and hotel proprietors have frequently given rise to law proceedings. Recently such actions have been rare, as nearly all possible points on which travellers and tourists have come into conflict with their hosts have been decided. With the uprising of a new class of guest, the cyclist and his machine, another vista in the way of litigation appears. One of the latest decisions is of some consequence. At the last sitting of the County Court at Malton, Yorkshire, a young farmer named John Newton, of Thornton-le-street, Thirsk, claimed £12 from William Davison, landlord of the George Hotel, Malton, for the loss of a bicycle left on defendant's premises. On the occasion of Malton Gala, plaintiff and a friend rode over to Malton on their bicycles, which they left in a loose box, in the stables at the George Hotel. Plaintiff said the ostler told them where to put the machines and that they would be safe. On going for his machine at night plaintiff's was found gone. Mr. Pearson, for the defence, submitted that there was no case to answer, as plaintiff must first show he was a guest at the inn before he could claim for anything he had left there. Defendant said that hundreds of bicycles were left at his place, for which he never made a charge. People often brought their machines, left them, and took them away again, without his knowledge. This was the County Court Judge's decision :—"I am of opinion that the case of Strauss and the County Hotel Company, 12, Q.B.D., p. 27, governs this case, and that there is no evidence that the relation of landlord and guest ever arose between plaintiff and defendant, and that, therefore, the defendant is not responsible for the loss of the bicycle ; and I give a verdict for the defendant with costs."—*Cork Examiner.*

WINTER STORAGE OF CYCLES. — No. 5449 says :—To those members who keep their machines in an out-house, or small cycle shed, I would suggest the use of a small paraffin oil stove during the winter months. These stoves can be obtained from nearly all ironmongers, cost about 4s. each, and burn but little oil, even if kept alight all day. *Verb. sap.*

* * *

A REASONABLE APPEAL.—The hon. sec. of the Northumberland and Durham District Association has been asking the drivers, through the local press, to grant more room on the roads during muddy weather. Frequently those who have charge of horseflesh consider bare room sufficient for the cyclist, but on slippery roads such fine driving is often extremely dangerous to the cyclist. It is to be hoped that the appeal will be met in a conciliatory spirit.

* * *

LUGGAGE CARRIERS.—No. 931 writes :—Thinking it probable that many C.T.C. members may have endured with me untold discomfort for the want of a suitable luggage-carrier for the bicycle, I would like through your columns to say that William Hoggarth, Haverthwaite, Carnforth, has met the difficulty, his carrier being but 7½oz. in weight, yet it supported 16lb. on my last tour quite to my satisfaction. It is placed over the front wheel, and does not interfere with the steering, while the price is only 2s. 6d.

* * *

ASSAULT ON A BICYCLIST.—ADDYMAN V. LIGHTFOOT.—Mr. Gully, Q.C., M.P., and Mr. Dodson appeared for the plaintiff, Thomas Addyman, manager of an engineering works at Gorton, and the defendant, the driver of an omnibus running between Chester and Kelsall, was represented by Mr. Roe-Rycroft. — The action was brought to recover damages for assault. On the 19th of May Mr. Addyman was riding on his bicycle just outside Chester, and the omnibus, driven by the defendant, was proceeding in the same direction. The allegation of Mr. Addyman was that while going along the road Lightfoot deliberately swerved his 'bus to the side, and, as a consequence, drove him into the hedge. Mr. Addyman called out, "Why don't you keep on your own side, you chump," and, thereupon, the driver struck at him with his whip and slashed him across the shoulders. The blow bruised Mr. Addyman, but it was not pretended that it had caused any physical damage. The driver was asked for his name, but he told Mr. Addyman that he could find it out for himself. Mr. Addyman followed the vehicle for some distance, and at last obtained the defendant's name and address. Subsequently he was written to and asked to apologise for his conduct, but as there was no response these proceedings were instituted. The defence was a denial of the assault. Lightfoot said that at the time Addyman was passing the omnibus he was putting on his overcoat, and the whip was not in his possession at all. It was held by Miss Johnson, a passenger, while he put on his coat and for some time afterwards. There was absolutely no foundation for the statement that he pressed the bicyclist into the hedge. There was sufficient space between the 'bus and the hedge for another vehicle to pass. As he passed the 'bus Mr. Addyman, the driver asserted, used an insulting expression towards him, and Miss Johnson flourished the whip at him, but did not strike him. It was also urged that the action should have been brought in the County Court.—The Judge (Mr. Justice Wills) said the evidence showed a flat contradiction of facts, but he liked the testimony of the plaintiff and his witness rather than that of the defendant and his witnesses. There must be judgment for the plaintiff for £10, and he would certify that there was reasonable cause for bringing the action in the High Court.—*Manchester Courier, 5th November 1894.*

THE PARIS SHOW.—As all the world knows, before the Stanley and National Shows close in England a similar exhibition will be in full swing in Paris. This being so, our enterprising contemporary — *The Cycle* — has arranged a special trip to the gay city, starting on the 11th instant, full particulars of which may be obtained at 108, Fleet Street, E.C.

* * *

"THE CYCLE, AND HOW TO KEEP IT IN ORDER."—A handy little booklet bearing this title, and sold at the nominal sum of sixpence, is now obtainable of The Cycle Press, 108, Fleet Street, E.C., and 49, Middle Abbey Street, Dublin. It is well worth the attention of the tyro, and in fact of all who require instruction in this line.

* * *

A PUNCTURE PREVENTER.—Mr. Ralph Bassett, of Cross Heath, Newcastle, Staffordshire, sends us a specimen of a new device—a modification of an old idea—for the prevention of punctures in pneumatic tyres. It consists of a piece of thin serrated metal bent arch-fashion over the tyre of the back wheel, and attached by spring clips to the rear members of the frame; the idea being that any thorn or other sharp instrument will be caught by the serrations and withdrawn before it reaches the ground a second time.

* * *

"TO BE, OR NOT TO BE?"—A Hampshire member, writing a few days since, says, *inter alia*—"I strongly hope there may be no alteration in the Handbook for 1895-6. The daily diary does not add ⅛ in. to the thickness, and the times of the sun and moon's daily rising and setting are *most valuable*. One solitary page for a diary is nonsense (*pace* Mr. A. G. Rennie at the half-yearly general meeting)." The fable of the old man and the ass is frequently exemplified in C.T.C. matters. In trying to please all we end in pleasing none. But "No matter! a time will come!"

* * *

A NICE POINT.—Among the many applications for advice and assistance received by the Rights and Privileges Committee of the C.T.C. there was not long since one in which a Mr. Thomas, of Maidenhead, was concerned. Inasmuch as Mr. Thomas was not a member of the Club no financial assistance was rendered him. His solicitor, a Mr. Stutchberry, of Maidenhead, was, however, informed that in his private capacity of a practising barrister, Mr. P. Edward Dove, one of the members of the Committee and R.C. for Middlesex, would move in the matter *con amore*, an offer which was gladly accepted. The result, as far as matters have proceeded at present, is herein indicated, and we hope shortly to chronicle the final outcome:—"QUEEN'S BENCH DIVISION (before Justices Mathew and Charles.—EX PARTE W. THOMAS.—INTERESTING TO CYCLISTS.—Mr. Dove moved *ex parte* William Thomas for a rule *nisi*, calling upon certain justices of Maidenhead to show cause why they should not state a case for the opinion of the Court. The learned counsel said that the applicant was convicted under the Highway Act, on July 30 last, of driving a bicycle on a footpath. The footpath in question was across a meadow, and not by the side of a highway, and therefore the defendant had committed no offence within the statute.—Mr. Justice Mathew: Did you apply to the justices to state a case?—Mr. Dove: Yes; and they refused, on the ground that the application was frivolous.—Mr. Justice Mathew: You may take a rule."—*Daily Telegraph*, October 30th, 1893.

CYCLING AND PHOTOGRAPHY.—A writer in *The Photographic News* when dealing with this subject asserts that "though the cycle accessory makers have introduced several luggage carriers there is not one fit to carry even the strongest camera any distance?" Such a statement is based upon ignorance of the fact that the Quadrant Cycle Company have for years supplied a perfect spring carrier for use upon tricycles, and have lately adapted it to the safety. The only drawback that can possibly be alleged against it is its weight, but those of us who do not fight rather than carry a few ounces extra are prepared to overlook this minor point.

* * *

A SAD END.—The C.T.C in general and the Council in particular have suffered a severe loss in the premature death of Mr. P. E. Dove, one of the R.C.'s for Middlesex. The deceased gentleman died by his own hand on the morning of the 21st ult., in his Chambers at Lincoln's Inn, the very day upon which his colleagues upon the Map and Road Book Committee anticipated the pleasure of receiving his ever-practical assistance. Mr. Dove was a barrister of undoubted ability, and his work upon the various Club Committees was always cheerfully and ably discharged. We regret exceedingly that such a promising career should come to so tragic and sad an end.

* * *

UNIVERSAL LIGHTS.—"Cr. Hembrow's motion for the framing of a bye-law requiring vehicles to carry lights at night, was considered at the Shire Council's meeting on Thursday. It was passed after having been amended by the addition of the words, "except four nights before the full moon, on the night of the full moon, and two nights after. The maximum penalty for infringement of the bye-law is £5."—*Mildura Cultivator*. From the foregoing it would seem that our Victorian neighbours are by no means blind to the advantages of Universal Lights.

* * *

THE UNIFORM.—Mr. T. H. Holding, the wholesale factor, writes:—"There have been a great many inquiries for the old brown Cheviot cloth of two years ago, and in response to the requests for a further supply, the makers have placed in my hands a small stock of the same. It will be sold to members and official tailors at the same prices as heretofore."

* * *

BICYCLE AND MARE IN COLLISION.—SILVERTON V. WEBBER.—This was a claim by the plaintiff, Mr. W. Silverton, 1, Forest Road, Kingsland, for £22, the amount of damage done to his horse and cab through the alleged negligence of the defendant, Mr. R. Webber, described as manager of the Solicitors' Law Stationery Society, 33, Lawrence Lane. Mr. Clavell Salter was counsel for the plaintiff, and Mr. P. Rose-Innes for the defendant. The plaintiff's driver, named Pilgrim, was on June 17th driving his cab along Park Lane, when, he said, the defendant, who was riding a bicycle in the opposite direction, allowed his machine to wobble in front of the horse and cab. The horse fell down on the top of the bicycle, and the defendant narrowly escaped fatal injuries. The defence was that the injuries resulted from an accident over which the defendant had no control, the bicycle skidding, owing to the greasiness of the roadway at the time. The jury found for the defendant.—*The City Press.*

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*** The demand made upon our space by the Stanley Show necessitates the holding over of much interesting matter.—ED.

The Annual Election of Represe

* Marked thus hold office at present, but those against whose name is also placed ‡ have not, as yet, qualified themselv attendance at the December fixture, or obtain the necessary leave of absence, the

ENGLAND—Counties Entitle

Counties or Countries.	*Number of Members.*	*Number of R.C.'s required.*	*Nominations received.*	*Candidates.*	*Address.*
Cheshire	359	1	1	*Denson, J. L.	21, Upper Northgate Street, Chester
Devonshire	256	1	1	Northey, W. E.	6, Seaton Avenue, Mutley, Plymouth
Durham	284	1	1	*Heslop, J. I. S.	11, Fawcett Street, Sunderland
Gloucestershire	382	1	...		
Hants (including the Isle of Wight)	314	1	1	Robinson, J.	13, Southgate Street, Winchester
Kent	549	2	2	Lewis, F.	Sundridge Park School, Bromley
				*Staples, H. C.	Swanley
†Lancashire	1041	3	4	*Dickinson, W.	11, Limefield, Blackburn
				‡*Ord, W. E.	33, Bairstow Street, Preston
				*Scott, T. J.	Wigan Street, Ormskirk
				Sutcliffe, J. D.	56, Derbyshire Lane, Stretford
Middlesex	1588	3	3	*Graves, H.	Science & Art Department, South Kensington
				*Wigan, C.	15, Ladbroke Square, W.
				*Williams, L. J.	29, Highbury Quadrant, N.
Staffordshire	298	1	1	*Herbert, J. H.	16, Darlington Street, Wolverhampton
Surrey	1096	3	2	*Beatty, O. H.	Killevey, Darlaston Road, Wimbledon
				‡*Phelps, W. S.	10, Beverley Road, Anerley
Sussex	298	1	1	*Cosens, W.	London and County Bank, Hertford
Warwickshire	338	1	1	*Symes, J. F.	26, Bilton Road, Rugby
Yorkshire	1009	3	2	*Dodds, F. L.	Stockton-on-Tees
				Fea, Rev. W. H., M.A.	5, The Park, Hull
The "Grouped Counties" of England, *i.e.*, all those					
Bedford, Berks, Bucks, Cambridge, Channel Islands, Cornwall, Cumberland, Derby, Dorset, Essex, Hereford, Hertford, Huntingdon, Isle of Man, Leicester, Lincoln, Monmouth, Norfolk, Northampton, Northumberland, Nottingham, Oxford, Rutland, Salop, Somerset, Suffolk, Westmorland, Wilts, and Worcester	2754	4	3	*Stanley, G. E.	Abney House, Tunbridge Wells
				*Watson, G.	Kelvinhoe, Monkseaton, R.S.O.
				*Sturmey, H.	Fern Bank, Middleboro' Street, Coventry
WALES.					
Anglesea, Brecknock, Cardigan, Carmarthen, Carnarvon, Denbigh, Flint, Glamorgan, Merioneth, Montgomery, Pembroke, and Radnor	877	1	...		
SCOTLAND.					
†Aberdeen, Argyle, Ayr, Banff, Berwick, Bute, Caithness, Clackmannan, Cromarty, Dumbarton, Dumfries, Edinburgh, Elgin, Fife, Forfar, Haddington, Inverness, Kincardine, Kinross, Kirkcudbright, Lanark, Linlithgow, Nairn, Orkney and Shetland, Peebles, Perth, Renfrew, Ross, Roxburgh, Selkirk, Stirling, Sutherland, and Wigtown	854	2	3	*Hay, Rev. A.	N Hamilton Street, Kilmarnock
				*Matthew, J. S.	59, North Frederick Street, Glasgow
				*Rennie, A. G.	49, Lilybank Gardens, Glasgow
IRELAND.					
Antrim, Armagh, Carlow, Cavan, Clare, Cork, Donegal, Down, Dublin, Fermanagh, Galway, Kerry, Kildare, Kilkenny, King's, Leitrim, Limerick, Londonderry, Longford, Louth, Mayo, Meath, Monaghan, Queen's, Roscommon, Sligo, Tipperary, Tyrone, Waterford, Westmeath, Wexford, and Wicklow	506	2	2	*Burke, E. W.	Heathview, Abbeyleix
				‡*Everett, Professor J. D.	Derryvolgie Avenue, Belfast
FOREIGN					
Austro-Hungary, Belgium-Luxembourg, Canada, Denmark, France, Foreign (General), Germany, Holland, Italy, Norway, Spain, Switzerland, and the United States of America	650	2	...		

ative Councillors.—Nominations.

or re-election, by attending the minimum number (2) of Council Meetings, and unless, therefore, they score a sufficient omination will be null and void. † Shows districts where a contest will take place.

o separate Representation.

Profession or Occupation.	*Proposer.*	*Address.*	*Seconder.*	*Address.*
Flour Merchant	R. Clarke	Kelsall	J. C. H. Hankinson	Chester
Solicitor	R. Rugg Monk	Plymouth	M. J. Thompson	Plymouth
Grocer	G. Bartram	Sunderland	W. C. Brown	Sunderland
Civil Engineer	W. J. Taylor	Southampton	W. M. Harman	Winchester
Schoolmaster	A. F. G. Codd	Bromley	G. E. Kirby	Bromley
Fruit Grower	E. D. Till	Eynsford	J. Hodsall	Farningham
Cotton Manufacturer	J. Clegg	Blackburn	J. Edmondson	Blackburn
Leather Merchant	C. Parker	Preston	W. Poole	Blackburn
Pottery Manager	S. Brighouse	Ormskirk	H. F. Clarkson	Ormskirk
Engineer	P. H. S. Nicklin	Liverpool	T. Hardwick	Higher Broughton
Civil Servant	H. Croydon Roberts	London	E. R. Shipton	London
Solicitor	H. R. Reynolds	Bedford Row, W.C.	J. S. Whatton	Hyde Park Street, W.
Solicitor	H. Croydon Roberts	Notting Hill, W.	P. E. Dove	Stone Buildings, W.C.
Ironmonger	T. E. Lowe	Wolverhampton	T. J. Rochelle	Wolverhampton
Barrister-at-Law	J. S. Amoore	Wimbledon	H. W. Rogers	Wimbledon
Commercial Clerk	G. M. Borguis	Anerley	R. Pierson	Anerley
Bank Manager	Lt.-General J. Sprot	Eastbourne	C. E. Pillow	Chichester
Chartered Accountant	G. Hogg	Rugby	H. T. Walton	Rugby
Solicitor				
Clergyman	A. E. Paulsen	Hull	J. B. Simpson	Hull

Counties Not Entitled to Separate Representation.

Gentleman	W. Cosens	Hertford	A. Cox	Ware
Agent	J. A. Williamson	Tynemouth	A. Robinson	Newcastle-on-Tyne
Journalist	J. A. Williamson	Tynemouth	W. Cosens	Hertford
Clergyman	W. Kendall Burnett, M.A., J.P.	Aberdeen	A. Martin	Glasgow
Tyre Manufacturer	J. Lennox	Dumfries	E. C. Stewart	Glasgow
Cycle Depôt Manager	A. Martin	Glasgow	W. G. M. Oliver	Edinburgh
Land Agent	R. E. Brenan	Dungarvan	S. H. Spencer	Rathmines
Professor	R. M'Gahey	Belfast	T. E. Osborne	Belfast

COUNTRIES.

Correspondence.

We shall at any time be glad to give prominence to letters from members on subjects of interest to the generality. Correspondents are requested to write on one side of the paper only, to forward their letters to the Editor, and to give their names, addresses, and membership numbers for his private information. We do not hold ourselves responsible for the views or opinions expressed.

"Ignore all selfish ends and interests of thine own—
He lives for little good who lives for self alone."

To the Editor of the C.T.C. Gazette.

COTTON v. WOOL.

Sir,—Several letters have lately appeared in your columns dealing with the relative value of cotton and wool for clothing purposes, but I notice that the most important and valuable quality needed to render clothing healthy to the wearer is seldom referred to. I mean the air-retaining capacity of the fabric. In the pamphlet issued by the Cellular Clothing Company I find a quotation from Ganot's "Physics," which refers to the value of air in clothing, and exactly hits the mark. The sentence is as follows:—"The clothes we wear are not warm in themselves, they only hinder the body from losing heat in consequence of their spongy texture and the air they enclose." As soon as clothing loses this spongy texture or air-retaining quality it becomes unhealthy, because it holds the moisture instead of parting with it, and it becomes cold to the touch.

The great advantage of Cellular underclothing is that by wearing it next the skin the body is kept surrounded with air, of an even temperature, in the small cells of which the clothing consists, and these cells retain from first to last their air capacity when cotton is used as the fibre.

Now, the great advantage of surrounding the body with small cells containing air (as is the case with Cellular garments) is that cotton becomes as healthy for the purpose as wool; and it possesses two other advantages:—it costs less than wool and it does not shrink.

MEDICUS, No. 591.

C.T.C. REPAIRERS.

Sir,—As an appointed C.T.C. repairer, I am very glad to see the letter of your correspondent, No. 4797, calling attention to the bungling of many who call themselves repairers. Butchers would be a more appropriate name to my mind. I have seen exactly similar cases to those which your correspondent calls attention to, and I think the Club would do well to inquire more fully into a firm's capabilities before granting the sign and appointment. Not long since I had a machine brought in to have the wheels trued up, and I found at least three spokes "soldered" in. What can any one know of cycle construction who would do such a thing as this? No. 9801.

Sir,—As a correspondent this month asks what other members of the Club have experienced at the hands of C.T.C. repairers, I may say that I have had many little things done by different repairers during ten years' membership, and have usually found that the work was done well. There are, however, few rules without exceptions, and, as bad luck would have it, I last year sent my tricycle to one of the principal firms in Coventry, the original builders of the machine, to have a new brake made for it in place of the old one, which was worn out. This was well done, but the machine came back in an absolutely unrideable condition. Not to mention trifles like the saddle-spring being put wrong end first, the mudguard and the lubricators not being sent back, and so on, an old chain that would not run on the wheels had been substituted for my own, which ran well, and the steering-rod had been put on inside out and then bent in a sharp curve at the front end to make it meet the crank! I need not say that it was impossible to steer the machine until the steering-rod had been put into the fire and straightened again and put in the right way. I had supposed from what is said in my Handbook that all the manufacturers in Coventry were authorised to do repairs of any machines. It might be said that my machine is of an obsolete type and that the men could not be expected to understand it. Still I should have thought that any child putting a puzzle together would know that if the pieces would not fit one way they wanted turning round some other way till they would fit, and that they ought not to be bent into a totally different shape to make them fit. One would suppose, too, that when a machine was taken to pieces all its own parts would be kept together, and not that any old chain that happened to be lying about would be substituted for one's own.

I am bound to say that when I complained to the firm they sent me a new chain, free of charge, and returned my mudguard, but what with delays and blundering I was put to no end of inconvenience and extra expense.

I gave some account of this under the head "Overhauling" (as it was playfully called in the bill I received) in the C.T.C. *Gazette* of October or November last year.

I may add that a man who was set to work at my machine at an authorised repairer's in a large Yorkshire town had no idea of how to get at the less accessible parts of the machine till I showed him how to turn it over.

It is much better to avoid large establishments if you can, and go only to some place where the master will himself attend to what you want. J. T. F., No. 1021.

KENT'S CAVERN.

Sir,—Allow me to review the notice of this cavern in your last issue. The writer reproduces an old theory that because within the last 200 years a film of stalagmite, 1-20 inch thick, has formed, therefore the floor of five feet in thickness (below which human remains are found) must have taken about 240,000 years to form. This conclusion is at variance with other geological requirements, and rests on an entirely unfounded supposition—that the stalagmite there has always formed at the same rate. To take the last point first, it is obvious that when water begins to percolate through a suitable soil the first deposits will be very rich, and as the water wears a fixed channel for itself, and uses up the lime in its path, they will decrease until they perhaps die away. I believe this has been observed in actual instances in nature; and, indeed, anyone with his eyes open has seen stalactites six and eight inches long depending from a newly-built limestone bridge, which certainly do not continue to grow at that pace, and are not seen at all on old bridges. The rule of three then as applied in the above way is entirely illusory.

With regard to geologic requirements, I will quote two sentences from Sir William Dawson. The first, which he prints in italics, is, "The earliest certain indications of the presence of man in Europe, Asia, or America, so far as yet known, belong to the Modern or Anthropic period alone," that is, the period succeeding the great Glacial Epoch. ("Salient Points," p. 470, publ. 1893.) The second is as follows: "Knowing as we do that the close of the Glacial period was not more than 8000 years ago." (*Ibid*, p. 476, see also p. 378 for other authorities.)

This first or Palæanthropic race, which existed with the mammoth and other extinct animals, disappeared at the enormous and widespread subsidence in "modern" times which has left beaches of exclusively modern shells at heights of 600 and 800 feet or more in Scotland, Ireland, France, North and South America, and well nigh all the globe. After the emergence from this deluge we find the ancient and massive race of man replaced by a slighter type corresponding to the Basques and other oldest races now existent in Europe. W. BOTHAMLEY.

Wimbledon.

THE PNEUMATIC BRAKE (KITCHEN'S) AND C.T.C. REPAIRERS.

Sir,—I notice in your correspondence columns an inquiry from "Brake" in regard to pneumatic brakes.

May I give you the benefit of my experience with this class of brake? I had the occasion to go into the Lake District and part of Scotland last August, and for my brakeless machine I purchased one of Kitchen's pneumatic brakes, and found it a great convenience where steep hills rendered back pedalling alone an impossibility, but for pulling up powers this brake is nowhere when compared with R. F. Hall's rubber brake. Pneumatic brakes only *ease* back pedalling to a great extent, they are useless for coasting, whereas, with Hall's brake, which I had fitted to my old machine, I was able to coast down the cruel hills of Devon and Cornwall with absolute safety; more than once it has saved me from a smash on an unknown hill.

Therefore pneumatic brakes are really of use to experts and a great boon to those who require detachable brakes, and as they act on the back wheel the danger to the fork crown is obviated. Novices and less experienced riders I must advise to pin their faith on the old pattern lever brake and see that they are fitted with Hall's brake. Care must be taken to see that the front tyre runs *true* to obtain the best results.

Anent C.T.C. repairers I quite endorse all that "T't, No. 4797," says. I have invested in three direct-spoked machines, all by high-grade makers, but found spoke breaking such a nuisance that two years ago I went to another maker who believed in tangent wheels (Nottingham Machinist Co.) with "Ball" rims, and although their wheels were 5 or 6lb. lighter and the spokes of finer gauge, I have never had any spoke breakage since, and the two machines supplied by that firm have given me unqualified satisfaction.

C. GORHAM, No. 11,100.

THE "BEVIS" WRENCH AND THE "ANATOMICAL" SADDLE.

Sir,—In the *C.T.C. Gazette* for October last a notice of a new adjustable wrench appears, purporting to be made by a firm calling themselves McCormacks Limited, of Plymouth; it was called the "Bevis," price 3s. 6d. post free. I brought it to the notice of a cycle agent in Winchester (Mr. King), and asked him to get me one; he wrote to McCormacks enclosing 3s. 6d., but received no reply, and has since then sent three more letters with a like result. I should much like to know if any other members of the C.T.C. have had a similar experience. The notice of the wrench was in the "Coventry Notes" of Mr. G. D. Leechman.

With regard to the "anatomical" saddle, I ordered one of these to be fitted to a new bicycle, but find it is next to impossible to keep on it; it is continually slipping round, however tightly it may be screwed on, and, owing to the absence of peak, the tendency is to be for ever slipping off in front! It is not made as shown in illustration in March number of *C.T.C. Gazette* with double hammock spring underneath, but with a rigid frame with no spring at all! Also, instead of being tapered off it is nearly square in front, making it very hard work indeed for the muscles under the thighs; in fact, it is so generally unsuitable that I have abandoned it for an ordinary peaked saddle—a clear waste of 25s. I should like to know also in this instance if members have had anything to do with the article. No. 13,996.

A SUITABLE DRESS FOR THE BICYCLE, AND SOME HINTS ON LEARNING TO RIDE.

Sir,—As the ladies' cycling dress is being discussed in the *Gazette*, I should like to say a few words to those who do not wish to go in for the rational costume, for which I personally cannot see the slightest need. I contend that the appearance of some of the many lady cyclists who pass my windows is such as to warrant the prejudice against the most health-giving exercise a woman can enjoy. I am constantly being told that if all women looked as neat and trim as I do when cycling this prejudice would be quite overcome! It seems to me a most simple matter. Two years ago I went to Mr. Holding, Maddox Street, W., who made me, for a moderate sum, a skirt and coat of the thin grey C.T.C cloth. The skirt reaches the ankle and is shaped on the hip like a riding habit, fulness is given where required at the knees, otherwise it is scanty, which prevents the ugly balloon-like effect—as seen from behind—of the ordinary walking skirt; it is so light that cycling is not in the least impeded by it. This skirt is worn over dark-coloured silk or woollen knickerbockers. The short semi-fitting coat is double-breasted and can be worn either open or closed, over a blouse. A plain sailor or felt hat completes the costume, in which there is nothing peculiar and which has often been used for a travelling gown. I adopt a plan suggested in these columns, which I consider most useful, and will quote: "A couple of strips of elastic, four inches long, safety-pinned inside the front hem of the skirt, some two and a half feet apart, with a gentleman's tie clip, on the free end of each, which should be clipped on to the tongue of the shoe before mounting." This effectually keeps the skirt in place and does not in the least interfere with mounting or dismounting. May I advise the lady cyclist to fasten her hat firmly on her head and to place it well over the forehead, and not be so misguided as to think it more becoming perched at the back of the head, showing a dishevelled fringe flying in the breeze. I have observed this is apt to give a wild look to the rider. In order to look graceful, I think a woman should ride as light a machine as possible with short cranks, and the saddle carefully adjusted rather high than low; she should sit upright, keep the hips quiet, and let the ankles alone do the work. By far the best way of learning to bicycle is to practise on a large lawn or smooth field, making no attempt to guide the machine, but keeping on and letting it go where it will! The grass gives confidence, and its rough surface prevents the feeling of being run away with, which is so alarming to the novice. Steering on the road comes quite easily when once a perfect balance has been obtained on grass. Cycling I consider the greatest help to those who are not strong, especially in winter, when it quickens the circulation and lifts depression of spirits caused by cold and sunless days. The charm of the exercise alone is so great as to render one quite independent of companionship in the daily ride, though on a long tour a kindred spirit certainly adds to one's pleasure. I have cycled much alone and have never met with anything but civility either from the farmer in his cart, or the yokel in his waggon; my greatest fear is of ladies driving their own pony carriages; they seem to make it a matter of conscience to run down the poor lady cyclist.

I am afraid that I cannot join in the lament over the decline of the tricycle. I rode it for many years and found it well enough on level roads, but practically useless and moreover dangerous in a hilly country, so I took my courage in both hands and determined to learn the bicycle. I found it a difficult art to acquire, and the grimy young teacher despaired of me. Shaking his head he would say "It seems to me you don't *h*understand the *theory* of it," which reflection on my mental powers made me ask him, with mild sarcasm, whether it might not be its *practice* I failed to understand? However, in spite of such encouragement (!), I struggled on, and in time became mistress both of the *theory* and *practice* of bicycling.

Cambridge. E. M.

LOWNE'S CYCLE LOG.

Sir,—I should like to add my testimony to the good points of Lowne's Log, for ordinary road work. I find that with a gear of 59·5 inches, it registers very accurately up to thirteen

miles an hour; I have not tried it at a higher speed, so cannot say when it ceases to act. This seems to me to be sufficient for ordinary road purposes. I have tried most of the other makes of cyclometers, but have found them unsatisfactory, at all events for safety bicycles. I have ridden 5000 miles with Lowne's Log and am very much pleased with it, it being beautifully made and giving no trouble.

Apparently, theoretically, with a gear of 59.5 inches, and supposing the Log to be fixed at 3 inches from the crank axle centre, and neglecting friction, the centrifugal force will equal the weight which actuates the Log, and the Log will cease to work at about a speed of twenty miles an hour. From the formula centrifugal force $= \frac{W}{g} \times \frac{v^2}{r}$ it also appears that with the same angular velocity the centrifugal force increases directly as the radius; so the Log should be fixed as near the centre of the crank axle as possible, to get the best results.

C. WILLIS, C.T.C., No. 1277.

NOTORIOUS KINGSTON.

Sir,—Allow me just one line on "Notorious Kingston." Does not the Coroner Hicks's behaviour remind one forcibly of the nigger, who, being left in command, ordered the jib to be lowered and then hoisted up immediately afterwards. When asked the *raison d'être* of this strange conduct, he replied—"Show my 'tority, sar." T'TT.

"THE COMPANION TO THE ROAD BOOK."—ANSTEY'S COVE.

Sir,—As an old cyclist of the district I regret I cannot congratulate your artist on his representation of "Anstey's Cove" in your November issue. The few pointed rocks at the end might be a faint indication to those with local knowledge of the place the sketch (?) is intended to represent, but if it is the object of such representations in your journal to depict the beauties of well-known spots, it must be admitted that this gives but little idea of what is really a lovely nook on the South Devon coast. By obtaining a photograph no doubt a correct idea would be got to copy from. No. 5661, Commander R.N.

[We believe that the author of these articles and sketches has personally visited each of the localities with which he deals, but we admit that in the case of Anstey's Cove his inspiration was not altogether a happy one.—ED.]

THE BOUDARD GEAR.

Sir,—The extraordinary impression produced by the Boudard advertisements reveals a wonderful ignorance of the commonest principles of mechanics, not merely among the non-expert public, but among those who ought to know better.

Putting friction aside no pressure can produce more than a certain result, whatever the intermediate machinery may be.

The pressure of the foot on the pedals can but produce one effect on the driving wheel, according to the gearing. The only varying element is friction. And I am sure, from what I have seen of the Boudard gear, there is scope for quite as much friction between the pedals and the driving-wheel as in any other gear yet invented.

I have avoided technicalities, in order to put the matter as plainly as possible.

The puff with which this invention came before the world is suspicious. No. 15,211.

CADS ON CASTORS.

Sir,—After reading Mr. F. W. Frost's letter under the above heading in the current number of the *Gazette*, may I be permitted to state that I entirely agree with him in his opinion on the subject.

There are, I regret to say, far too many of those selfish individuals a-wheel who think that the road is wholly and solely for their use, and it is such low bred cads as your correspondent describes that we have to thank for the universal bad feeling which at present exists between the cyclist and the general public.

And it is no uncommon thing to see that unthinking mortal the "scorcher," after he has rushed wildly past a vehicle, dart across to the other side of the road, immediately in front of the horse, in order to gain the near side or be even with his companions. During the early part of the present year I was myself riding through Richmond Park one Sunday morning on my machine, when without the slightest warning three "scorchers" rushed madly past, fairly making me start, and then did the same thing to a vehicle a few yards ahead that was being driven by a lady. The space was not sufficient for the three to pass abreast, so two went in front and the other followed. However they were barely clear of the horse's head when the one in the rear darted, as I have said, directly under the animal's nose in his anxiety to be again even with his companions. Is it to be wondered that the horse took fright, plunged terribly, and most assuredly would have bolted had not a gentleman who was walking on the grass and saw the affair grasped the bridle just at the moment? Or is it a matter for surprise that such conduct should give rise to expressions and feelings of utter disgust, which would never have been thought of had the cyclists in question passed the carriage in a respectable and proper manner? While such unpardonable behaviour as this and that narrated by your former correspondent is constantly being practised by this fiend of the wheel, can the cycling fraternity ever hope for a goodly feeling to be established, such as should exist between all users of the public roads and parks? A. F. JACKSON,
C.T.C., No. 3953.

CYCLING FOR LADIES.

Sir,—Reading in this month's *Gazette* that a lady suggests that some one should invent a suitable skirt for cycling, I by thorough experience having found how to ride a tricycle with the same dress as one can go visiting in, will describe it. It is extremely simple and perfectly comfortable, and I feel sure that any lady who wants to ride her cycle unostentatiously will adopt it. I have been a member of the C.T.C. almost from its formation, being formerly a member of the Tricycle Union, which long since ceased to exist. Ten or twelve years ago, if not more, ladies had not yet taken to riding on wheels. There were very few, I was among the few, for I saw at once how delightful it was for those whose means were limited to be able to go about and enjoy the country air. I was not young, and accordingly was very much chaffed when met on my tricycle followed by my dog, by a set of people who take pleasure to chaff and utter rude remarks, and unfortunately there are too many of that sort. At that time no special dress was thought of, and many ladies riding with a very full dress, such as was worn at that time, had, by their skirt being entangled in the wheels, to have a piece of it cut out to liberate them; or else they, and I was one of them, had petticoats, under the upper skirt, which also impeded utterly the movement of the knees. By degrees I found that sort of costume which when off the tricycle nobody would notice for being otherwise than a walking outdoor dress. Let the skirt, which is not to be gored, be about two yards twenty-six inches in width, bringing two thick pleats or full gathers for the front in the waist, so as to have ample fulness for the play of the pedals, the skirt not so short as to expose the entire foot, but short enough so that the feet get free of the dress in the play of the pedals; then on each side of the front width of the dress, which has been brought much in front, at the height under the knee where one would wear a garter, have a ribbon sewn firmly to the dress, and when the dress is put on for

cycling these two ribbons are to be tied on the leg just under the knee; that keeps the skirt from being blown up by the wind and uncovering the legs. Then at the back and just at the folding of the knees have a button and loop (outside), taking away from the skirt twenty-five inches, leaving, however, the proper width to seat one's self comfortably, and it is then impossible for the skirt to touch the wheels, even on a strong windy day; no petticoats, and gaiters in the same stuff as the dress are *de rigueur*. With such a dress, when you arrive anywhere you unbutton the back of your skirt, you untie your knees, and you can enter any place without attracting the slightest remark. Such a dress would do quite well for a bicycle, as the skirt, being tied up under the knee, cannot fly about.

I must grieve, being one of those who like to ride on the quiet, and being old and feeling timid, that so many ladies (?) are making themselves so conspicuous in dressing themselves in that most unbecoming style—knickerbockers. Unfortunately so many young women seek notoriety; perhaps having nothing to recommend them they jump at adopting a costume to attract notice, but such practices will deter many quiet ladies from taking to the cycle, as it must keep that sort of exercise unpopular for the timid ones.

If you think, Mr. Editor, that these notes on rational cycling dress may be of use to my sisters of the wheel (not the knickerbockered ones), I should like you to publish them in your valuable journal.

A FOREIGN LADY ARTIST.

Sir,—In answer to the appeal of your lady contributor for suggestions for a practical bicycle costume, which will not in any way make the wearer look like a "manikin," I write to tell you of mine.

I find it most comfortable, and so far it seems to have no drawbacks, and, "though I say it as shouldn't," to be incapable of improvement.

I saw not long ago in a journal that the intricacies of ladies' dress was a subject of absorbing interest to the male mind. If this be true I have no doubt that the following details will be read with profound attention by the many "lords of creation" who see your *Gazette*.

Here is my costume. In summer:—Spun silk or Indian-gauze combinations high to the neck, knickerbockers, skirt and coat of thin serge of a dark colour, black gaiters to the knee over black shoes, and black merino (thin) stockings: short, light, and loosely fitting corsets, a silk or thin flannel shirt, very neat, so that the coat can be removed in hot weather, sailor hat with black ribbon and dark blue gauze veil.

In winter—thick merino combinations, high and with long sleeves (most important for warmth, as the arms are at rest), merino stockings, corsets, knickerbockers, skirt, coat and leggings of covert coating, flannel shirt or cloth waistcoat, buttoning to the throat, Russia leather shoes.

As to make: the skirt is 2¾ yards wide, in length about half-way between knee and foot when standing up, fastening on each hip with a flap and three buttons, the pockets being also there. The hem of the skirt is turned up on the *right* side, three rows of stitching at each edge of it, and no lining, so that there is absolutely nothing that can become unstitched or catch in any part of the machine. I ought not to have said "no lining," for I find it a great comfort to have the front breadth of the skirt lined half-way up only with glacé silk, and also the knees of the knickerbockers covered with the same. One yard will do all. With this little luxury, the friction on the knees is much reduced, and the short skirt never rides up even in a head wind. The knickerbockers of course fasten at each side and below the knee.

A soft felt hat — brown looks very well with the covert coating—with brown or black ribbon, completes the costume. In order to be quite independent of weather I strap on my machine one of those feather-weight mackintosh bicycle capes with a strap at each side, through which the hands, when it is worn, are slipped, causing the cape to be spread over the knees without having to hold it there, and consequently keeping them quite dry.

The winter coat ought to be made so that it can be worn buttoned to the throat, or open.

I cannot but think that one of the objections our friends and relatives have to bicycle riding for ladies is the leg being exposed to view in any way. I therefore strongly advise leggings of the same colour as the dress, instead of thick knitted stockings which you mention in the uniform price list, and which also often have the additional disadvantage of making one's shoes feel too tight.

I think our great endeavour should be (at present, at all events, while the undoubtedly strong objection exists in many minds to lady bicyclists) to do away with the disrepute into which the delightful pastime has been brought to try to be as woman-like, instead of as man-like, as possible, that there may be no danger whatever of our being mistaken for those foolish women who by their costume and manners only succeed in exciting derision and contempt. A.D.C.

GEARS AND CRANKS.

Sir,—The subject raised by No. 1895 is well worth more consideration than it has yet received, and I will endeavour to throw a little light upon it, but the questions he puts can hardly be answered categorically, as so much depends on gradient and condition of road, on age and powers of rider, and on speed required. Though closely connected, height of gear and length of crank are distinct questions, and should be treated separately, and the results afterwards combined.

The answer to question 1, "Is more muscular power required to cover a mile with 66½in. gear and 7in. crank than with 63in. gear and 6½in. crank?" is distinctly "No," from one point of view, but practically speaking, it depends on circumstances. Power, or energy, is measured in foot-pounds, and assuming, as we must, that the two bicycles are identical in construction and weight, the power, of any kind, required to propel them a given distance, must be the same. Of course, the introduction of additional friction by extra wheels alters the conditions, but apart from that, the higher the gear the more power required at the pedal, but the less distance it has to travel, and conversely, the longer the crank the smaller the power and the greater the distance; in any case the power applied at the pedal, multiplied by the distance travelled by the pedal, must give the same result. 1lb. × 100 yards = ½lb. × 200 yards.

It does not at all follow, however, as would at first sight appear, that it is immaterial what gears and cranks we employ. First, to deal with gears. Paradoxical as it seems, I maintain that under certain conditions, such as frequently exist, a high gear demands less muscular power than a low one. Taking a level, hard, smooth road, when the machine is got fairly under weigh, the rider has only to overcome (1) the surface friction, which diminishes with the velocity; (2) the bearing and chain friction, which increases very slightly, if at all, with the velocity; and (3) the wind resistance, which at high speeds only becomes of great importance. At a moderate speed, on such a road, the machine seems to run of itself, the rider does not pull at the handles, and is not conscious of putting any pressure on the pedals; in fact, all the real work he is doing is *lifting the weight of each leg* alternately, such weight in descending being sufficient to keep the wheels in motion. This point is, I believe, generally overlooked, but any one who will sit on a chair, and then raise one foot off the ground, and keep it suspended in the air for even five minutes, will realise its importance; and I am inclined to believe that the flexor muscles getting tired, failing to lift the leg, and leaving it to be lifted by the pedal, thus putting extra work on the descending foot, is a considerable factor in producing the

general fatigue at the end of a long run. Of course the legs must be lifted, or they could not descend, but every time they are lifted unnecessarily is pure waste of effort. If then our riding were all done on good, level roads, or on the track, fairly high gears would have a considerable advantage, and recent French experience with a very high gear seems to corroborate this. We are not now considering racing, however, but road riding for pleasure, and fortunately in many respects, we have up-hill work to consider as well as level. (Every one admits the advantage of high-gears down-hill.) Bad roads and head winds may be included under hill climbing, as all alike call for increased exertion. This is true, whatever gear be used, and the majority of riders, whatever gear they employ, walk severe hills. The practical rule, therefore, would seem to be, use as high a gear as is compatible with riding such hills as are usually ridden without undue exertion. But this again is partly dependent on the average speed. Other things being equal the greater the speed (within certain limits) the easier the work. Many a hill can be ridden with a rush, which cannot be managed with a standing start and a slow grind. Exertion must be measured by the distance covered, not by time. It may be easier to ride for six hours over average roads with a low gear than with a high one, and yet if only forty-eight miles be covered it may be easier to do them in five hours with the higher gear. Personally, I find 66½in. very comfortable for southern roads with a fairly good machine, weighing about 30lb. As has been shown, the real question is as to the hills, or their equivalents, and in these cases weight is a very important factor. The age of the rider, also, must be considered; as one gets past middle age, the capacity for rapid motion diminishes much faster than the actual strength; therefore (again within limits) the older the man the higher the gear, contrary to the usual advice.

Now for a few words on cranks. Lengthening them, to a certain extent, counteracts raising the gear: it reduces the power required on the pedal, and increases the rapidity of its motion. It would be possible, probably, to construct two machines, one with a 6in. and the other a 7in. crank, and the wheels so geared that the distance travelled by the pedal pin in covering a mile should in each case be exactly the same, and consequently the power applied at the pedal the same. The figures given by No. 1895 show that there is very little difference between 63in. by 6½in. and 66½in. by 7in.; in the latter case the pedal pin travels 29ft. further, and consequently has required slightly less power at each revolution, but there have been seventeen fewer motions of the knee, ankle, and every other joint, which to elderly people is a matter of importance; but this again depends partly on the average speed. It matters little *per se* whether I have to make sixty easy motions or 120; but if I am limited to sixty seconds, one is possible, and the other—to me—absolutely impossible. I use a 7in. crank, and with it can average ten miles an hour, wind and weather permitting. I recently had a day's ride on a machine (rather better than my own) 67½in. gear and 6½in. crank. Where the road was fairly level, and even up moderate slopes, I made better speed than usual, with no more exertion; but when it came to hills such as one sometimes rides, but often prefers to walk, I missed the extra ½in. leverage. Probably if I owned the machine I should change the cranks, but not until after further experience. I would certainly not shorten my crank if it involved lowering the gear. A man with long legs can, of course, use a longer crank than a rider with shorter reach, but 7in. is not at all excessive for average people, especially if they pedal properly, which they have much better chance of doing when pedalling slowly. I should, therefore, be inclined to say, use as long a crank as you find comfortable at your usual speed; if you want to increase your average speed, and you already have full length crank (for you), reduce it. On the other hand, if you have a high gear, and find the work rather trying on your usual roads, before reducing the gear try a longer crank. There is probably no danger of straining the knee by a 7in. or even 7½in. crank, and I cannot think that if "no strain at all" is felt at present, there is any risk of evil results later, seeing that a slight amount of present fatigue is not only harmless, but conducive to muscular development.

It is much to be desired that all machines should have easily changed gear wheels, and cranks which could be slightly elongated on coming to a steep hill would be a boon to all who, like the writer, are OVER FIFTY.

Sir,—It seems as though No. 1895 had not fully grasped the fundamental law of mechanics which tells us that "gain in power is always compensated by loss of speed." Hence the answer to the first question would be, that the muscular force required is the same in both cases.

It is really a question of adaptability or of such application of power as may produce the required result with the greatest ease to the rider. Bearing this in mind, it is easy to calculate the slight differences in the distribution of force in these machines.

A 6½in. crank geared to 63in. requires rather more force to move it than a 7in. geared to 66½in.

$$\frac{66\frac{1}{2}}{7} = 9{\cdot}5 \qquad \frac{63}{6\frac{1}{2}} = 9{\cdot}7 \text{ nearly.}$$

Hence if the pressure required to move the 7in. crank were 9½lb. it would be about 9lb. 11oz. in the 6½in. one.

The following proportion sum will bring us the gearing required to make the machines work at equal pressure. As 6½ : 63in. :: 7 :: 67·85in., or in other words a gear of nearly 68in. would give equal pressure.

This tells us that if the two pedals were moved at the same speed No. 1895 would gain 1·35 yards in every 66½ yards traversed by his friend.

He would thus outrun his friend by about 35¾ yards in the mile, not by one furlong, as he seems to think. This increased speed is of course, as before stated, compensated for by proportional increased muscular force.

I have not followed No. 1895 in all his calculations, as they are not necessary for my purpose, but I note a small error in the estimate of the 7in. circle which should be just under 44in. taking $\pi = 3{\cdot}1416$.

Cæteris paribus, of course the longer leg is better adapted for the longer crank, but I suppose that this rule may be much modified by other considerations, such as the shape and strength of the bones, ligaments, tendons, and muscles; by the position that suits the rider best; his style of action, &c.

Every cyclist must determine for himself by experience the arrangement of parts which his physique requires.

No. 2428.

THE HOTEL SYSTEM.

Sir,—With all deference to the opinion of the Hotel Committee as expressed in its report on the tariffs, may I suggest that a postal vote of the whole Club be taken on the question, for after conversation with many C.T.C.-ites I find that the prevalent feeling on the subject is *indifference*. Thus it appears that the time has come, not for the revision of the tariff, but for its abolition, for, in addition to this indifference there is the fact that the day when the wheelman was received with condescension is past, and that in place of his former difficulties in the way of hotel accommodation he finds himself, and rightly, as well treated as any other respectable citizen. Why, therefore, attempt to draw a distinction where none exists?

With regard to the advantages of the tariff system I have toured annually for some time now, and though invariably using the C.T.C. hotel as a *recommended house*, I have never yet asked for the tariff nor announced my connection with the C.T.C. in any way. The result has been the usual

good accommodation of a first-class hotel, fair charges, and no *fuss*. I have no doubt scores of the C.T.C. members have had a similar experience, whereas many know to their cost, for I have proved it again and again, that production of a C.T.C. Ticket of Membership with a view to saving, say 6d. on a bill of fare, is calculated to make one's stay anything but pleasant. The system of *recommended* houses might, I think be adhered to with every advantage, both to the proprietors of such houses and to the C.T.C.-ite who uses them, and this without turning the Handbook into a a sort of bound menu!

To sum the matter up, is it worth while tinkering a system which is practically out of date? Very few of the members even *appear* to obtain good results (financially) from it, and then more often than not, if a slight advantage is gained, it is at the expense of a good deal of fuss and loss of temper. Moreover, judging from the number of attacks levelled at the Club on this head, there can be no reasonable doubt that it is the weak spot in an otherwise very creditable programme.

Would that the gentlemen who form the Committee had used the time spent on the revision of this "light of other days" in the compilation of Road Book and the formation of Consular District Associations.

W. N. AGAR, Consul for Knutsford, Cheshire.

[The Hotel System has been the subject of discussion for many months, but we are loth to suppress any contribution calculated to throw light upon the points at issue. All the same, however, we desire to point out that for good or for evil the Council have already decided to make trial of the new methods advocated by the Hotel Tariffs Committee, and it is now too late to go back from that decision.—ED.]

The Ladies' Page.

Conducted by Miss F. G. ERSKINE.

Climbing instead of cycling is a bad preparation for writing in a paper peculiarly devoted to cycling. Nevertheless, during a short visit to Gruyère and other places, I have succeeded in collecting information which some members of the C.T.C. may be able to turn to account in the course of the next riding season.

Every one knows Gruyère cheese, but few know the place that the cheese is named after. In point of fact the soapy looking concoction is made all over Switzerland, and only abroad is it peculiarly known as Gruyère. On the slopes of the Dent de Jaman, the man who makes it will say it is "Fromage de Jaman"; in other places like answer will be given.

Well; we had often heard of Gruyère. I had seen it from a distance years ago—on my first visit to Switzerland—and despite the lateness of the season three of us staying at Les Avants decided to go. The weather was bad, but a rising barometer made us hope for the best.

It was a steep pull from the hotel to the top of the Col de Jaman. The path in places was slippery—in others boggy. The autumn tints still lingered on the trees. The peaks on the other side of the lake were capped with snow, and rose out of some faint banks of fog against the blue sky. Up and up we wound in short zigzags, till at last we overtook some Swiss peasant folk on their way to Rossinierès close by Chateau d'Oex. After a short halt at the top we set off down a path—courteously termed a mule track; had it been termed a kangaroo path there would have been more truth in the appellation. We had five miles of this. For that distance we all skipped, hopped, staggered, and slid till at last we reached a decent path down the valley of the Hongrin leading to Montbovon. And very lonely it was. The river rushed between huge walls of rock, with ferns drooping in crevices: a greenish-white foamy torrent tumbling over masses of black rock. These rocks were most curious—black predominating, but from time to time we came across masses of red rock, which we thought to be porphyry. From Montbovon we drove to Epagny over a first-rate road, which was being carefully mended with well-broken stones. This road is the one a cyclist should take, either from the Lake of Geneva—from Vevey *via* Châlet St. Denis and Bulle to the Seinmenthal and Theen. It may best be described as undulating, and like most Swiss post roads its surface is magnificent.

At Epagny we descended from our somewhat jolting chariot and shouldering our belongings went up a steep track overshadowed with trees—and paved with most malignant cobble stones—to Gruyère; which stands on a hill above the road, and a good mile from it. The rain pattered down steadily, and we could just make out the white walls of the town and château looming above us. We passed under a most antique-looking gateway, and through several zones of varying smells; then another gateway, whitewashed and with a half obliterated fresco over it. We then found ourselves in the paved straggling chief street of the town. Broad-eaved châlets—no two alike—lined the sides, brown with the wind, sun, and snow of ages, whilst lights twinkled in the small lattice windows. The "Fleurs de Lys" received us with a much heartier welcome than many a grand electric-lighted hotel. The hostess was a sweet-faced Swiss woman, and our inquiry for rooms and dinner was met with a cheery "Mais certainment," and a promise of the latter item in half-an-hour. To save further allusion to eating I may here say that everything was most excellent, especially a huge bowl of cream every morning, and the charges were extremely moderate.

Cyclists who visit Gruyère, if they be artists or photographers, will be delighted with the quaint old-world place. The Château is shown to visitors, and is most picturesque within and without. In the street is a most curious house locally called the Fool's House, from its being at one time owned by the jester to one of the last Counts of Gruyère. This "Chalamala" ordered his house in the whimsical way suited to his character—a broad wood roof overshadows pointed windows, moulded with gilt twisted borders. There are coloured medallions between each pair of windows, bearing a floriated cross, asses' heads, a rayed sun, and last but not least a fool's head, supposed to be Chalamala himself. An arched doorway, with a red door, grilled and barred with hammered iron, stands at the top of a flight of stone steps, looking like a section from a spiral stair. Further up the street is a glorious old brown châlet; a white-washed cupola tower, with a huge antique clock face, peers from behind it. Given a place like this, and a set of photographic apparatus, it will be readily understood the day was not an idle one. Whilst photographing one of the quaint gates, it became evident a figure or two in the foreground would improve the composition, and at that moment a most picturesque boy, with a couple of sheep, came in sight, and all were promptly impressed. In spite of bad light and rain, boy and animals stood fast for a good ten seconds, and turned what would only have been a fair photo. into a pretty picture.

What a storm we had that night! The rain came down in sheets, whilst the wind howled and roared amongst the eaves and shutters, as if we should all be blown bodily off the hill—away over the low-lying plain to Bulle. Before sunset two of us went for a walk, and were hustled and blown almost to pieces by a hot south wind, whilst ragged sheets of smoke-coloured clouds poured down the valley, and hung in great wisps round the Variel Noir and the Moléson.

The next morning was fair—brilliant sky and sun—so I started off with the camera and two children from the hotel to keep others away. We prowled round by the church and street. Just as I was focussing the latter a big dog trotted by in harness with a wood-cart. Then another time a flock

of goats passed, just too late for me to get them. Then we tried down a steep place for a shot at the walls of the town. Suddenly there was a crash. The children had appealed to "Mademoiselle" to look at something, and somehow she had slipped up, and subsided full length in a bed of nettles, with camera on the top. The comic side made all laugh; but to that fall I owe it that I am writing not of actual riding as I hoped to do, but of other things. There is a favourite old machine at my disposal now, but owing to a severe strain no riding must be thought of for a week or two, and then the command is "Go gently."

I do not quite know what the present race of cyclists would say to that same machine, for it is fitted with two very powerful band brakes; being the one I used some years ago in mountain rides. What is more, at some places, on the curves of the Simplon where the road rises one in thirty-five, I needed them both—also on the Diableret road and coming down from Comballaz to Sepez. In a long descent the hand is apt to get cramped, and to any one thinking of a good Swiss tour I say have your machine built to stand the strain of great brake power. So far as I see, at present, brake power does not hold the place it ought to. It would seem that road riding and touring are being made secondary to racing, on road and path. That is another reason for lamenting the decadence of the tricycle in popular favour. Light and swift as the present bicycles are they cannot compete in stability and luggage carrying capacities with the three wheeler. Twelve years' knocking about all the year round, and in all weathers, has caused me to have some very decided opinions about machines, and I cannot but think the present rage for small wheels, and no brakes worth mentioning, is not quite what is needed for an ideal touring machine. Of course for fine weather and good roads they are all well, but take the case of the lamentable failure of the majority of the small safety machines in bad weather on bad roads. Lady cyclists, I have always thought, should have strong light machines without complications, as I know from experience how disagreeable a breakdown is in some out-of-the-way place. It is not too much surely to expect that they should be able to understand their machines. To do them justice, many more ride in earnest now, and it is to be hoped that quiet rational riding may never die out in this country.

But despite frantic paragraphs in papers about Royal folks taking to the wheel, the fact remains that amongst the better classes cycling is not popular. The good of the exercise in moderation is allowed, but owing to the absurdities of those who allow zeal to overleap discretion, any one riding "one of *those bicycles*" is sure to lose caste amongst a certain class termed the backbone of society. I am aware that this fact is not a palatable one—but there it remains. Cycling now is not nearly as popular as it was a few years ago, and the "new woman" has contributed in no small degree to this result. It is the fashion to overwhelm those who in any way disagree with the prevailing mania (fortunately confined to a few very insignificant persons) with torrents of sarcastic abuse which are in their way as amusing as to read the quarrels of the rational "manikins" themselves. In the best interests of cycling—which I love thoroughly—it is ten thousand pities this new craze cannot be treated as was the mania for ladies riding astride on horseback some years ago. The advocates raved and blustered—they invoked medical opinions, and asserted that the days of side saddles were numbered. A grand parade was to have been held, when some one in high quarters "put down their foot" and the affair ended—as all such should end—in smoke.

The Ockham episode is another straw showing which way the wind blows. But of the twenty-five men who so warmly showed their sympathy in the matter, how many would have cared to see their own relations in such a false position? To sympathise is one thing—to approve is another. Mr. Drage, addressing the students of Lady Margaret Hall and Somerville College at Oxford, in the course of his remarks said:—"The extraordinary creature known as the 'new woman' was the exception, not the rule, and cordially disliked by students, as she was to be avoided by any one desirous of forwarding the employment of women." He went on to say that "eccentricity in dress, though *perhaps* a sign of genius, was also one of unfitness for work,"—a statement which I believe most people will endorse. Those who have done most in the world are the quiet retiring people, so matter-of-fact that no one dreams of associating them with daring feats of skill or endurance. These persons who swagger about in their hybrid costume and tell the world very loudly when they do any very ordinary ride, are by no means of value to the sport. They may be classed with the May-flies—ephemerals—things of a day. All true cyclists will most fervently hope their day may be a very short one.

The Stanley Show.

By G. DOUGLAS LEECHMAN.

The first row, as usual, is largely occupied by the temporary offices of firms having exhibits in other parts of the hall.

13A. W. A. Smith, Northampton. Mr. Smith shows Knighten's patent home trainer and racing index. Two drop-frame safeties are mounted firmly on stands, the front wheels are driven as well as the back, and gearing connects them with two model riders and safeties on a circular track, which represent the pace and positions of the respective trainers. It is very ingenious and takes well.

14. The Centric Cycle Co., Birmingham. The "Centric" front-driving safety is shown as before, except that it is now fitted with a vulcanite dust guard. The gear is also shown fitted to a rear-driving safety. It will be remembered that the hub is hollow and divided in the centre, and that the large wheel fixed on the centre of the axle engages by side teeth with a smaller wheel fixed in the hub. In this case the axle is carried beyond the fork end, and is provided with a chain wheel, over which and the crank-axle wheel the chain is fitted. I do not see that the complication can have any beneficial effect.

18. Perry, Richards & Co., Wolverhampton. Several ladies' safeties are shown on this stand; one is fitted with a plated finely-woven wire dress and chain guard, which, while new, has rather a good appearance. The frame has a single backbone, curved and supported by struts at each end, thus providing additional strength without encroaching too far on the dress space. The "Empire" safeties are on the general modern lines, but the bridges are absent from some of the back stays. The plates of the fork crown are at a good distance apart, and the fork sides are plated where the foot-rests are attached, thus tending to maintain the good appearance of the machine after use. One of the safeties is finished so as to represent bamboo, giving it a decidedly pleasing appearance.

19. Clark Bros'. Cycle Co., Ltd., London, E. These machines presented a good appearance. The cranks were deeply fluted on face and back, and in connection with this a good point was made in providing the chain wheel with a a stud, near the periphery projecting into the back of the crank, thus relieving the axle of much twisting strain between the crank and wheel. The lady's safety is built with two straight backbones starting from the extremities of the head and converging towards the bracket. We prefer the slope to be in the opposite direction. The frame, being a girder carrying weight, should be deeper at the centre than at the ends.

21. Central Engineering Works Co., Ltd., York. This exhibit is always worth inspecting, though I do not always agree with the results arrived at. One of the principal novelties consists in a triple bearing-head. It is similar to an ordinary head, but an extra row of balls is fitted round the outside of the bottom cup, another cup made in one

piece with the top of the fork crown completing the bearing. This should relieve the bottom of the head tube of some strain. One of the machines is fitted with large chain wheels, ten and twenty-four teeth respectively. To avoid widening the head the closed-in parts of the back stays are of greater length than usual, and the wheel base is correspondingly lengthened, There are two bridges in this part instead of one.

24. Langton & Co., Brixton, S.W. The frequent failure of the triplet tandem safeties at the fork crown has been fully realised by the trade as a whole, and measures are now in most cases taken to guard against these serious mishaps. In the present instance the front fork is composed of four round tubes which are carried right up to the top of the head, somewhat as in the old "D.H.F. Premier." The tubes are set at a fair distance apart, and the arrangement looks powerful. The driving wheel is very strong, and the hub is constructed on the disc principle, like a Humber bracket, a system to which I am very favourably disposed, providing efficient means can be found for locking the adjustment; $\frac{1}{4}$in. balls are used here and $\frac{3}{16}$in. in the rear bracket. In these machines, too, there is a connection between the chain wheel and adjacent crank independent of the axle. The safeties are built in three different sizes to fit different riders. The lady's safety has a doubly-curved lower backbone and a single-curved upper tube fitted above it, the two being bridged by a single short strut.

25. The Bamboo Cycle Co., Wolverhampton. This is one of the principal draws of the Show, and apart from the original machine two methods of construction are shown. In one the bamboo tubes are pared down at the joints to a cylindrical form and fitted together with aluminium joints. These are screwed on to the ends of the tubes and are provided with split lugs, which give them a powerful grip as well. The heads of these machines are built of aluminium, but excepting the pedals, cranks, chain-spokes, and bearing parts, bamboo is used instead of metal. In the other construction vulcanised fibre is used instead of aluminium, and ash and other wood is utilised for the head. The back stays are left straight, but the handle-bars are curved back. In one machine two separate canes are used, and the bulbus ends form the handles. Both weight and price are comparatively low. The first experimental machine is shown, and its comparative clumsiness discloses what an advance has been made since it was constructed some few months since. A pinching test on the chain does not appear to reveal more than an ordinary amount of spring. The progress of the invention will be watched with much interest.

27A. R. Cripps & Co., Nottingham. Mr. Cripps has recently dissolved partnership with Messrs. Humber and Goddard, and has started on his own account. Considering the short time he has had at his disposal the exhibit is very creditable. The "Standard" pattern machine is of good design, and shows a new method of combining a narrow tread with straight back stays. Opposite the back part of the chain wheel a recess is formed in the tube, cutting perhaps $\frac{1}{32}$in. into it. Of course the part is strengthened, and strikes one as being at least as good a method as putting in the severe bends which this season are so common. A special design in ladies' safeties is being introduced, but was not ready when I called.

28. The Swan Cycle Co., Lewisham Bridge, S.E. A very light racer was shown on this stand, the joints being made of tube, no castings or stampings being used in the bracket or fork crown. In the lady's safety, two backbones run up parallel to near the head, where the upper one is curved to get a longer hold. The wire dress guard used would probably look better on paper than in practice, being much after the fashion of a fancy fire screen.

29. Cushion Hub Syndicate, Ltd., New Kent Road, S.E. The cushion hub does not seem to have much to do with cycles. One "Cheeta" safety has an open head like the "Referee," but the fork tubes are closer together and rather more forward to allow of plenty of room for turning sharp corners. An ingenious idea is shown for locking the discs in the "Humber" bracket. The screwed ends are slotted about half through vertically from the under side, the ends being at right angles to the axle. Lugs project down from the extreme ends below the bottom of the barrel, and a bolt passes through one and screws into the other. Tightening the bolts draws the lugs slightly together and puts a grip on both discs. Turning the bolt the reverse way leaves the discs free for adjustment. A small light full diamond safety is shown for rationally attired ladies.

30. Robinson, Millward & Co., Clapham Junction, S.W. This firm gives a good deal of attention to cycles for military use. They have improved their safeties by fitting larger tubes and chain wheels than formerly and by using a wider chain. They show a quadricycle chair, no doubt a delightful vehicle for the front rider provided he or she be incapable of action—or unselfishness.

31. E. J. Jarvis, Praed Street, London, W. The "Ideal" triplet tandem is a striking machine, and is generally well designed; perhaps the front cross-stay might be a little better arranged. The chains are well placed and the gearing is 100in. This machine has nine teeth on the hub, but a light roadster single is shown with ten, which I do not think any too many.

32. Hadley Cycle Co., Kentish Town, N.W. The oval tubes have been discarded in the safeties, which are now on the all-prevailing lines, but they are retained to some extent in the tricycle. The design of this last has been slightly modified—some of the tubes have been strengthened, and the tread reduced in width. The chain wheels are screwed on to the axles of the safeties, and are locked by screwing on the crank the reverse way. The best class machines are also fitted with detachable brakes. The "Model B" is a good machine of lower price.

33. Thomson & James, 39, Chalk Farm Road, N.W. A very well-designed tandem safety is shown here, and the firm have done very well with it in the past season. Their tandem tricycle is shown on similar lines, but with pyramid back and Starley axle. A lady's safety is shown with two parallel straight backbones, some 8in. or 9in. apart. This makes a strong frame, and is intended for ladies who wear the rational dress, but still prefer to dismount in the usual way. This frame is, of course, much stronger than when the tubes are nearer together at the back.

34. Thames Cycle Co., Barnes, S.W. Here is another instance in which a somewhat radical alteration has been made in the front fork, to increase the strength for a tandem safety. Each fork side is composed of two tubes spreading apart slightly from the axle towards the fork crown, where they are united in two strong plates. The frames on lighter single machines are constructed with short backbones to increase rigidity, but I am afraid the gain is lost in the extra curving of the fork. The lady's safety has a straight lower backbone, and partly curved upper, the curve being at the back, and bringing the two tubes into contact a few inches forward of the bracket. The cording of the dress guard is carried well back. Special provision is made for bridging the back fork without having to spring the tubes on to the axle. A direct-steering carrier tricycle is shown in which the box and fittings may be entirely removed for recreative purposes.

35. Chas. Steverson, South Kensington, S.W. A very neat pyramid-pattern tricycle is shown here, and is fitted with the Starley axle, which is coming very generally into use. The lady's safety is of usual design, with straight tubes converging towards the bracket, and with the back looking uncomfortably low compared to the front.

37. Lonsdale Cycle Co., Islington, N. Two ladies' safeties are shown here, and they introduce a new feature in construction, which is good in conception, but might be better carried out in practice. The upper backbone starts from the bracket and reaches to the middle of the head. A

strut is fitted in the lower angle. A short tube extends downward in line with the diagonal, and the lower backbone runs upward from the end of it. Two tubular stays also run back from the same point towards the rear axle, but unfortunately they do not reach that point nor run towards it directly. A balanced toe-clip is shown in two or three forms, and accomplishes its object without much additional weight.

38. The Atlas Cycle Co., Aston, Birmingham. Here also two ladies' safeties call for notice. One has a single backbone of large diameter slightly curved. The top end is split and opened out, and the ends are brazed near the top and bottom of the head. The split part would appear to require strengthening somewhat to resist the strain. The other machine has two backbones, the lower being straight and the upper one slightly curved at the lower end, the two being joined by a short strut at the crown of the bend. A strong-looking tandem safety is shown on the same stand.

39. Earls Court Cycle Co., Kensington, W. Three safeties are shown here with spring driving wheels. The flanges carrying the ordinary spokes are free to revolve on the hub but are kept at their proper distance apart. From the centre of the hub eight arms, about 3in. in length, radiate and carry a corresponding number of spokes, half running forward and the remainder back at a tangent to the rim. A helical spring is introduced into each spoke, and these springs extend up to a certain point as the machine is driven. A saving of power is claimed for the arrangement, but without personal trial one cannot pronounce for or against it. One of the machines is a safety of ordinary design, but it has a very excellent dress guard. The mudguard is perforated at intervals along the edge and the flat guard stay is similarly treated; cords are laced from the stay to the guard almost horizontally, and this would appear to make a very efficient and withal light screen.

45. Rudge-Whitworth Cycle Co., Ltd., Birmingham and Coventry. No material alteration has been made in the design of the Rudge cycles, but attention is being paid to such important parts as the hardness of the bearing cones and other internals. Among the Rudges are a fine triplet tandem, with diagonals throughout, quadricycle tandems, direct steering and rotary carriers, juvenile safeties, an adjustable trotting sulky, and vehicle spider wheels with pneumatic tyres. The Whitworth safeties are being fitted with a detachable chain wheel of improved design, the three points of attachment in the tooth ring being triangulated. The racer is to have a rather shorter head, and four different sizes in frames are to be made throughout, otherwise there is little visible alteration. A popular Whitworth safety is being introduced, with open crown, detachable chain wheel, and laced spokes. It will, doubtless, have a large sale. The new Whitworth tricycle is an excellent machine of its type. It has a pyramid diamond frame and Starley axle. A tandem is built on similar lines. The tandem safety, with drop front, has a very neat adaptation of the rein steering. The steering tube passes down the front diagonal tube, and arms project through a strengthened part near the bottom to receive the rods connecting with the fork crown. From the same point the upper of the two straight backbones rises to the top of the head, and a stay runs down behind in the same line to strengthen the angle. The front saddle pillar is horizontal, and is adjusted up and down on the front diagonal tube; this would need modifying for a tall lady. A tandem tricycle is built on the same lines. The Whitworth triplet safety is a clean cut mount, but the Rudge machine of the same type looks stronger with the additional tube rising from the front bracket. I am disappointed to find that the sliding brackets are still continued in these machines. A good point in the Whitworth is the distance the bracket bearing extends into the chain wheels.

46. Cycle Gear Co., Coventry. The two-speed gear for which this company is famous, and which is probably the best thing of its kind now on the market, has been improved in detail, and the narrow-tread cranks are now made detachable instead of fixed. Last year the company began making complete machines in addition to gears, and very wisely decided on making first-class only. The designs have been modified to keep up with the times and two grades are now made. The road racing safety scales about 24lb. The tandem safety forms a new pattern and the positions are arranged the same as on a single. The steering may be left under the sole control of the rear rider, and long connecting arms are used so as to avoid the danger of loose connections. The brake acts on the rear wheel. The lady's safety is made in two grades with a modified straight tube frame, leaving a space clear down to the level of the gear case. A machine is shown with ten teeth to the hub and twenty-four to the crank axle, though of course the latter number can be altered according to the gear required. The exhibit as a whole is a very good one.

50. J. Rickard, Doris Street, Kennington, S.E. This stand was not ready when I called, but some points were already visible. A safety was shown with a tube midway between and parallel to the head and diagonal. The handle bar stem telescoped into this, and the steering was effected by short arms and a single connecting rod. In another machine the front fork and head were vertical, the lower backbone slightly curved, and the diagonal tube was omitted. The saddle pillar was vertical, and the steering as before, but with two rods. In both cases the handles were brought each very near to the saddle, and sharp turns would be difficult. It reminds one of the original "Rover." The other machines include a strong-looking tandem, and a tricycle on accepted lines.

51. Union Cycle Manufacturing Co., Boston, U.S.A. A single safety is shown here, but being a "Yankee" it is of particular interest. It has some good points, but it does not compare favourably with our best home productions as a whole. It is a racer with diamond frame, 8in. ball head, rather small diameter tubes, and straight back stays. The plate crown is of good depth, but the fork sides are of small section. The back forks are flattened out near the wheel axle and look weak. The tops of the back fork are set in and are brazed into a single tubular lug. The clips for the saddle and handle bar pillars are of bad design. The bracket is narrow and on the old cup and cone principle, but it extends well into the interchangeable chain wheel. The axles are hollow, making the inner ball races too large. The cranks also are hollow, widening the tread. The pedals resemble "Lucas's Rational." Large balls are used, and the hubs are dust-protected with enclosed cloth washers. The outside joints are rather blunt-edged, but the tubes are supported internally with diminishing liners.

54. Leicester Cycle Co., Leicester. A tandem safety holds pride of place in the centre of the stand. The frame has tubes running horizontally to the top bones. I prefer the triangulating cross tubes. A single large tube is fitted between the brackets. The eccentric carrying the front bracket is very easily adjusted. The hubs have overhung edges to retain the oil, and the pedals are neatly constructed without outside nuts, the adjustment being effected by the inner cone. The special novelty is the "Push Easy" gear. The right back stay is forked, and carries an internally-toothed wheel, which engages with an externally-toothed wheel on the hub, the chain runs on teeth on the former wheel, which is necessarily larger than the latter. A large hub wheel is thus secured without making the front chain wheel larger than usual, and without very much increase of friction. The bottom of the head looks very liable to catch grit.

64. Grosvenor Cycle Co., Wolverhampton. A tandem safety at one end of the stand is a well-designed machine, with an eccentric front bracket. The fork crown is neat, but does not look much stronger than that fitted to some of the single machines. Two patterns of ladies' safeties are shown, one with straight lower backbone, the upper backbone being

gracefully curved and strutted to the lower. This machine is fitted with a transparent celluloid dress guard, and the Grose gear case being panelled with the same material gives the machine a very nice appearance. The dress guard, however, should be carried back beyond the vertical line. This was done in another case where wire netting was used. Juvenile safeties are made for both sexes.

66. Marshall Gear Case Co., and Haynes Bros., Old Kent Road, S.E. The principal item here is the Marshall gear case. This is of metal, and is made so that the rear end draws away with the wheel and the body may be detached almost entirely with little trouble. It is provided with a sponge lubricator, and is lined with cork at various points to prevent rattle. It is shown fitted to different machines, among others a tandem safety with curved dropped front and handle-connected steering. Two ladies' safeties are shown, one having the two backbones converging towards the head, which is undoubtedly the right arrangement, though they might have been set further apart with advantage, and the dress guard taken further back.

67. W. Bown, Ltd., Summer Lane, Birmingham. The "Æolus" safeties are shown downstairs this year. The latest are built with large tubes and large barrelled hubs to suit. The bracket is on the cup and cone principle, but the two cups are turned in one piece with a centre tube, so as to secure perfect adjustment and proper lubrication. This piece is clipped up in a parallel exterior. The hubs are dust-protected and the drivers are fitted with nine or ten teeth. The lady's safety has the usual straight-tubed frame and is built in two grades, the better one fitted with a detachable Carter gear case, the other with a simple chain guard. The pedals are screwed into the cranks and fixed with an expanding screw.

68. Walker & Co., Potter Street, Birmingham. Several tandems are shown on this stand. In some the chains are fitted on opposite sides, and the front bracket swings, which is not good. In others a single chain is used, and it is kept in contact with the middle chain wheel by two small-toothed pulleys, one in front on the top of the wheel, and the other behind the bottom. The rear axles of the "Arab" safeties are held in eye-bolts passing down the back-stays, and adjusted by screws; unfortunately this involves joining the back fork on more than an inch in front of the axle, and a rather severe shearing strain is set up. The brakes are of A form, with rubber wearing surfaces. The ladies' safeties have two straight backbones converging towards the bracket. A neat tricycle, with central gear and swinging bridge is staged at one end. The "Steed" safeties are a cheaper line made by a branch of the same firm.

70. Paisley Bros., Peckham, London, S.E. The "Encore" triplet is stayed on the horizontal system, and has the lower quadrilaterals triangulated. The wheels are strong, and the front fork is about the most powerful article I have come across. The crown is built of three ¼in. plates, and measures about 3in. deep over all; the centre-plate might be much lighter without detriment. Large chain-wheels are fitted to some of the safeties.

71. Hall Bros., Brixton Road, London, S.W. The "Haddon" safeties are built up with Birmingham Small Arms Co. fittings, and appear to be very good value for the low prices charged. The semi-tangent spokes are attached by their heads to the horizontally-turned edges of the hub flanges. A neat form of cup and cone bracket is fitted to one machine, with discs screwing into the ends to exclude the dust.

72. Kingsland Manufacturing Co., King Henry's Walk, London, N. The "Wonder" lady's safety has very large tubes, especially in the backbones, which are straight. The handles are dropped and the dress-guard reaches back only as far as the fork. These points require attention.

73. A. Blackwell, Birmingham. The safeties shown are fitted with oil retaining hubs. The lady's safety has a leather dress-guard, and the upper backbone bends down to touch the lower, which is straight. The brake fittings are made of spring strip and are quickly detachable. The tandem safety has a good frame and the rear bar is fitted with T handles. Cartwright's hollow plugs for repairing single-tube tyres are shown.

74. W. E. Hamm, Leighton Road, London, N.W. A handle-bar is shown here with a spring clutch in the centre, which allows the handles to be raised or dropped on touching a small lever. The use of such a contrivance must surely be limited, and it interferes with the fitting of the usual type of brake work.

75. Allen & Summerfield, Wolverhampton. The "Melbourne" safeties are much of the usual description. The lady's safety has a straight lower backbone and a doubly-curved upper. It is graceful, but requires strutting.

76. Count de Rossetti, 19, Portchester Gardens, W. The principal item consists of a flywheel, weighing from 11lb. to 16lb., carried on four light tubular spokes near the rim of the rear wheel. As the flywheel runs no faster than the driver the weight might be better expended in strengthening the parts of the machine. There can be no economy of power, except perhaps sentimentally. It is no good. A saddle is shown carried on light steel wire rope stretched in front and behind the saddle, and passing round the points of the rear frame. It is as good as a pneumatic tyre—*so they say.*

78. W. E. Prust, Dalston, London, N.E. Drew's tyre is shown here. It has an inner tube, and the leather-strengthened edges of the cover are laced together on the underside. It is held to the rim by the mere inflation. It is said not to matter if some of the lacing be left undone, but an attachment depending on inflation only is not safe enough.

79. Hands & Cake, Birmingham. The "Bard" safeties are on present day lines with large tubes and barrel brackets. The cones, however, instead of being turned in with the crank axle are made separately and screwed on to save hardening the spindle and save warping; they are screwed on so as to tighten themselves. The lady's safety has duplex parallel backbone without struts, and the front end of the upper tube is turned up to the top of the head. It is neat, but not as strong as it might be.

80. Lindley & Biggs, Clapham, S.W. The machines shown are few and are placed very conveniently for inspection. Particular care is given to details as well as to general design. The handle-bar clip is separate from the ball head adjustment, and in some cases a special draw clip is used for fixing the saddle pillars. A racing safety is shown in which the saddle leather is suspended from two short verticals brazed to the top backbone. It can be adjusted for pitch, and rubber buffers intercept some of the vibration. One machine is fitted with large chain wheels, and another is equipped complete with rifle for military use. The most interesting feature of the exhibit arrived late and consists of a tricycle fitted with a three-speed gear actuated by an expanding chain wheel on the crank axle; this is a most ingenious idea, but there is not room to explain it here. It has a disadvantage in that back pedalling is rendered useless, but a powerful rim brake is fitted to the front wheel. The main axle is built up like two barrel brackets, and the frame is carried right round the edge of the gear case.

83. Wait & Lomas, Leicester. The triangulated front frame is shown only in a very good tandem safety, but it is still made largely for singles. The lady's safety, with crossed curved tubes, has been improved up to date, and another pattern with straight tubes is also made. Both have corded guards extending well to the rear. The Hall patent copper wire interlaced dress guard is shown by a sample; a special feature about it is that each side can be tightened up by tensioning a single wire. Another tandem safety is shown with drop front, and a stay crossing the frame between the rear saddle and the front bracket.

(To be continued.)

The Club Uniform.

SPECIAL AND IMPORTANT NOTICE.

The uniform stock is now kept at No. 7, Maddox Street, Regent Street, London, W., where it is under the direct management of Mr. T. H. Holding, who will execute WHOLESALE and RETAIL orders as heretofore, and at the same tariffs.

The new Uniform Catalogue and Price List is now ready, and will be sent to all *new* members in due course, while any old members will receive one by return of post on sending stamped and addressed envelope to Mr. Holding at the address referred to.

All Orders should be accompanied by the needful remittance. Cheques and Postals should be made payable to T. H. Holding, crossed "—— & Co., Not negotiable," and P.O.O.'s should be made payable at Vere Street Post Office, London, W.

LIST OF OFFICIAL TAILORS HOLDING APPOINTMENTS.

(The firms marked with an asterisk have been appointed Ladies' Tailors also, at the usual prices.)

ABERDEEN—K. Maclean & Son, 17, Bridge Street.
ACCRINGTON—J. W. Foster, 25, Blackburn Road.
AYR—Currie, Rae & Co., Ailsa Buildings.
BALE (Switzerland)—V. Settelen.
BARNSTAPLE—J. N. Brewer, Cross Street.
BATH—***Gould & Son, 23, Milsom Street, and 1 & 2, George Street.**
BEDFORD—J. Beagley, 5, High Street.
BELFAST—J. Stringer, 47, Donegal Place.
BERLIN (Germany)—W. Köpsel, W 8, Mohrenstrasse 50.
BERWICK-ON-TWEED—Paxton & Purves.
BIRMINGHAM—***Husband Bros., 21, Paradise Street.**
BLACKBURN—Tomlinson & Co., 17, Aspden's Buildings.
BOLTON—J. Boyd & Co., 21, Fold Street.
BOURNEMOUTH—W. Rogers & Sons, 1, Albany Terrace.
BRADFORD—Macvean Bros., 17, Darley Street.
BRIDGNORTH—W. Jones & Co., Waterloo House.
BRIGHTON—R. Needham & Son, Castle Sq., Old Steine, and Palace Place.
,, F. Willard & Son, 2, Western Road.
BRISTOL—Randall & Walls, 50, Park Street.
,, ***B. Thomas & Co., 54, Park Street.**
BURNLEY—J. Leedam, 5, Red Lion Street.
BURTON-ON-TRENT—W. Brown, 184 and 185, Station Street.
BURY—J. Burrow, Silver Street.
CAMBORNE—J. Vivian & Brother.
CAMBRIDGE—J. Gillings, 14, Alexandra Street.
CANNOCK—C. H. Cope.
CANTERBURY—J. G. Jackman, 6, Parade.
CARDIFF—E. J. Baker, 33, Queen Street.
CARLISLE—Clark & Son, 35, Bank Street.
CHATHAM—J. W. Taylor, 191, High Street.
CHELMSFORD—J. P. Green.
CHELTENHAM—S. King & Son, 35, Winchcomb Street
CHESTER—J. T. Davis, The Cross.
CHICHESTER—W. Long & Son, Southgate.
CIRENCESTER—G. Fraser & Son.
CORK—J. Drew, 34, Princes Street.
COVENTRY—B. Riley, King's Head Buildings.
CREWE—Vickers & Son, High Street.
DARLINGTON—W. G. Wallis, 4, North Gate.
DERBY—***Gamble & Cunningham, 54, Sadler Gate.**
DEVIZES—Parsons Bros., 3, St. John Street.
DONCASTER—G. Goldthorpe & Son, St. George Gate.
DORCHESTER—H. Bascombe, High West Street.
DOUGLAS (Isle of Man)—J. Hale, 6, Athol Street.
DUBLIN—***T. J. Callaghan & Co., 15 & 16, Dame Street.**
,, ***Pim Bros., Ltd., 75, South Great George's Street.**
DUDLEY—W. R. Kneale, 251, Castle Street.
DUNDEE—Tocher & Henry, 63, Reform Street.
EASTBOURNE—
EDINBURGH—***Gulland & Kennedy, 55, North Hanover Street.**
ELY—H. Kempton & Co., High Street.
EXETER—***J. & G. Ross, 227, High Street.**
FAREHAM—W. Surman, 4, High Street.
FAVERSHAM—F. C. Jackman, Market Street.
FALMOUTH—W. Gooding, 34, Market Street.
FOLKESTONE—W. Ward, 38, Guildhall Street.
FROME—Swaine & Son.
GLASGOW—R. W. Forsyth, 13, 17, Renfield Street.
GLOUCESTER—Wareing & Son, 3, Westgate Street.
GREAT GRIMSBY—C. H. Thompson, 112, Cleethorpe Road
GUILDFORD—J. Levy & Co., Bank House.
HALIFAX—W. H. Graydon & Son, Northgate and Crossley Streets.
HANLEY—T. & R. Gilman.
HAVERFORDWEST—Greenish & Dawkins, 24, Market Street.
HEREFORD—C. Witts.
HULL—C. H. Capes & Son, 20, Savile Street.
ILFRACOMBE—R. Jewell, 123, High Street.
INVERNESS—H. Fraser, 23, Bridge Street.
IPSWICH—W. Damant, 13, Butter Market.
JERSEY—E. P. Falle, 10, Beresford Street.
KIDDERMINSTER—Thos. Bennett, 6, Oxford Street.
LEAMINGTON—T. Claxton, 106, The Parade.
LEDBURY—C. Witts.
LEEDS—L. W. Rowland, 36, Albion Street.
LEICESTER—***F. Brett, Peterboro' House, Granby Street.**
LEOMINSTER—C. M. Binyon, 1, Corn Square
LIMERICK—Cannock & Co., Limited.
LINCOLN—J. W. Martin, 2, Silver Street.
LIVERPOOL—***G. E. Young & Co., 49, Dale Street.**
LLANELLY—Davies & Parry, Compton House.
LONDON—H. Brinkman, 253, Oxford Street, W.
,, Clare & Son, 102, Fenchurch Street, E.C.
,, T. H. Holding, 7, Maddox Street, W.
,, **W. J. Pile, 22, Philpot Lane, E.C., and 71 and 73, Park Street, Camden Town.**
,, The West End Clothiers Co., 37, Ludgate Hill, E.C.
,, FOR LADIES ONLY.—**John T. W. Goodman, 28, Albemarle Street, Piccadilly, W.**
(Mr. Goodman, although not the holder of an official appointment as gentlemen's tailor, is yet prepared to cater in the best West End style for those members who are willing to pay the following prices:—Lounge jacket—Brown cloth, 48/-; Grey cloth, 50/-. Norfolk jacket—Brown cloth, 53/-; Grey cloth, 55 6. Breeches or Knickerbockers—Brown cloth, 18/6; Grey cloth, 19 6. Trousers—Brown cloth, 21/-; Grey cloth, 22/-. Waistcoat—Brown or Grey cloth, 15/6.)
MAIDENHEAD—R. Whitaker & Sons, 12, Queen Street.
MAIDSTONE.—H. Taylor, 25, Gabriel's Hill.
MANCHESTER—***Meggitt & Co., 22, Cross Street.**
MARLBOROUGH—J. Russell & Sons, High Street.
MIDDLESBROUGH.—J. Newhouse & Co., Albert Road.
MULHOUSE (Alsace)—H. Dussere.
NANCY (France).—J. Galilé Fils et Grandmaitre, 23, rue St. Dizier.
NEWBURY—A. Smith, 88, Northbrook Street.
NEWCASTLE-ON-TYNE—W. Caldwell & Co., 43, Grainger Street.
,, J. Turnbull, 43, Pilgrim Street.
NEWPORT (Isle of Wight)—G. B. Purkis, 51, High Street
,, (Mon.)—Wildings, Limited, Bon Marché.
,, (Salop)—H. Harper, Market Place.
NEWTON ABBOT—C. Pope, 42, Courtenay Street.
NORTHAMPTON—Blacklee Bros., Gold Street.
NORTH SHIELDS—***D. Hill & Co., Howard and Union Streets.**
NORWICH—Downes Bros., 29, London Street.
NOTTINGHAM—W. Gabbatiss, 20, Market Street.
OXFORD—Arthur Shepherd, 6, Corn Market Street.
PARIS—J. Drouart, 9, Rue de l'Echelle.
PERTH—W. Byars, 88, High Street.
PLYMOUTH—L. Sansom, 17, George Street.
PORTADOWN—***W. Paul & Son, 46, High Street.**
PORTSMOUTH—See Southsea.
PRESTON—W. Elton, 11, Lune Street.
RAMSGATE—G. Wellden, 40, High Street.
READING—E. P. Silver, 17, King Street.
REDRUTH—J. Evans, Tower House.
RETFORD—C. J. Merryweather, Bridge Gate.
RHYL—Hughes & Son, 56, High Street.
SCARBOROUGH—J. Etches & Son, Huntriss Row.
SHEFFIELD—R. R. Neill & Co., 12, Change Alley.
SHREWSBURY—W. F. Watkins, 6, Pride Hill.
SOUTHAMPTON—J. H. Gilham, 20, Hanover Buildings.
SOUTHPORT—***E. Trounson, 213, Lord Street.**
SOUTHSEA AND PORTSMOUTH—***Chase & Tighe, 82, Palmerston Road, Southsea.**
,, John Maltby, Commercial Road, Landport.
SOUTH SHIELDS—Mackey & Co., 23, King Street.
STIRLING—Jas. Robertson & Sons, 16, Murray Place.
ST. LEONARDS—***H. Angliss, 44, London Road.**
STOWMARKET—F. Ward, Ipswich Street.
STRATFORD-ON-AVON—S. Williams, 25, Bridge Street.
SUNDERLAND—***J. Gillies & Son, 56, Fawcett Street.**
SWANSEA—H. Thomas & Son, 9, Heathfield Street.
SWINDON—R. L. Mugford, 15, High Street.
TAUNTON—Josiah Lewis, 11, North Street.
TORQUAY—Montgomery & Dolbear, 49, Fleet Street.
TRALEE—B. Smith & Co., 4, Denny Street.
TROWBRIDGE—W. Beaven.
TUNBRIDGE WELLS—J. Pickett & Son, 25, Grosvenor Road.
,, ,, ***E. C. Jenkinson, 28, Mount Pleasant.**
UTRECHT (Holland)—J. de Gooijer, jr., 394, Kromme Neuve Gracht.
UXBRIDGE—Carrick & Coles, Waterloo House.
VIENNA I—F. Kadlczik, Rothenthurmstrasse 31.
WALSALL—Barrett & Forrester, Park Street.
WARMINSTER—Foreman & Son, 23, Market Place.
WATFORD—***J. P. Taylor, 95, High Street.**
WESTON-SUPER-MARE—***Tytherleigh & Son, Church Road.**
WIGAN—Coop & Co., 23, Walgate.
WINCHESTER—F. W. Flight, 90, High Street.
WINDSOR—R. Whitaker & Sons, Peascod Street.
WOLVERHAMPTON—H. B. Burslem, 19, Darlington Street.
WORCESTER—H. Parsons, 82, High Street.
YEOVIL—J. A. Milborne, 21, Prince's Street and Church Street.
YORK—W. R. Beckwith & Son, 30, Colliergate.
ZURICH—A. Whittlinger, Bahnhofstrasse.
,, **T. A. Harrison, Anglo-American.**

List of Candidates, December, 1894.

Amateur Bicyclists and Tricyclists—Ladies and Gentlemen—in all parts of the world are cordially invited to join the Cyclists' Touring Club. The Subscription is a nominal one: Three Shillings and Sixpence per annum only. The Entrance Fee is One Shilling in addition, and both are payable upon making application for admission. Forms of Application for Membership are obtainable gratis of the Secretary.

ARTICLE 6.—All Members shall be elected in the following manner: The candidate shall apply for election to the Secretary on such printed form as shall be from time to time prescribed by the Council. His name shall be sent by the Secretary to all members of the Club in such manner and with such particulars of his application as the Council may from time to time direct, and at the expiration of seven days from the issue of such notice he shall become duly elected providing that no protest shall have been lodged against him with the Secretary. In the case of a protest being lodged against any Candidate for election the same shall be considered by the Council at their next meeting and they shall have full power to elect or reject such Candidate. The Council may temporarily set aside or anticipate the usual formalities relating to the election of a candidate should good cause be shown and grant upon such terms and conditions as they may determine a provisional certificate of membership in advance of the time at which the member would be entitled to the ordinary ticket.

ARTICLE 7.—The Secretary shall send a copy of the Memorandum and Articles of Association of the Club with a ticket of membership and other rules and regulations of the Club as the Council may from time to time direct to every member within one month from his election.

ARTICLE 8.—Any member of not less than two years' standing may become a Life Member upon payment of such sum as a composition for all future annual subscriptions and upon such application and notice as a General Meeting shall from time to time determine, but the Council may in special cases dispense with the necessity for two years' standing. In every respect except the payment of annual subscription, a Life Member shall stand upon the same footing as an ordinary member. All moneys received from Life Members shall be dealt with and applied in such manner and form as a General Meeting shall from time to time determine.

☞ **Particulars of the conditions upon which a Provisional Certificate of Membership or Life Membership is procurable may be obtained of the Secretary upon application.**

NOTICE.—This List is published with the "Monthly Gazette" on the 1st of each month. "Application for Membership" forms must reach the Secretary not later than the first post on the 20th of the preceding month to ensure insertion.

***** The Names and Addresses of the Chief Consuls set over the various Counties will be found in the Club Handbook (price One Shilling, of the Secretary).**

HAMPSHIRE.

Carter, J.	Calluna, West Hill road, Bournemouth
Furner, Miss F. K.	" " " "

SOMERSETSHIRE.

Skrine, H. M., Colonel, J.P.	Warleigh Manor, Bath

DUBLIN.

Keily, J. Townsend	Kildare Street Club, Dublin
Trevelyan, C. L.	Monkstown
Trevelyan, W. R.	"

UNITED STATES OF AMERICA.

Meddaugh, E.	95, Edmund place, Detroit, Michigan, Wagne
Weller, C. F.	3130, Forest avenue, Chicago, Ills.

FOREIGN GENERAL.

Mactaggart, J. (Maryborough C.C.)	Maryborough, Queensland, Australia

ITALY.

Verschoyle, H. F. S.	Villa San Patrizio, San Remo

Answers to Correspondents.

No. 1843.—A long controversy took place in these pages not many months since upon the Front Driver *v.* Rear Driver question, but nothing tangible resulted, and the conditions have not been greatly modified in the interval. Our personal opinion is and always has been that the Rear Driver is distinctly the better machine, and the public long since came to the same decision.

No. 3293.—We will try to arrange for the appearance of an article upon the subject early in the New Year.

Rev. G. B. R. B.—Many thanks. The cutting is, however, but a weak adaptation of a clever little "poem" which originally appeared in *Outing*, and was some time since reproduced in the *Gazette*.

C.T.C., Bristol.—By publishing an extract from another journal we do not necessarily endorse all the statements, nor even the views of the writer. The cutting to which you refer was used to "point a moral and adorn a tale," and for this purpose you will not, we think, deny that its use was justifiable.

No. 5772.—We fear your machine was in the first instance of an inferior grade, and as a consequence your experiences of C.T.C. repairers cannot be taken as a fair criterion of their capabilities.

A NEW FRAME.—Through the courtesy of Mr. C. W. Brown, who from time to time contributes to these columns, and who, in the present issue, deals from his own point of view with the exhibits at the Stanley Show, we have had an opportunity of making trial of a new form of frame designed primarily for the use of ladies. The machine with which we experimented was a Humber Lady's Safety, though the specialty is applicable to and is even more essential in tandems upon which the lady takes the front seat. We hope to illustrate the design in an early issue, but, in the meantime, we would strongly recommend all to look out for the article on the stand of Messrs. Humber & Co. at the National Show. It is without exception the most rigid and the best-designed frame for its particular purpose we have ever mounted, and the mechanically-inclined must inevitably recognise its merits when we say that a model of the frame pinned together with round pins (no brazing or solder being employed) reveals the fact that every strain to which the machine can in practice be subjected is met by a counter stay.

Life Membership.

LIST OF CANDIDATES, DECEMBER, 1894.

ARTICLE 8.—Any member of not less than two years' standing may become a Life Member upon payment of such sum as a composition for all future annual subscriptions, and upon such application and notice as a General Meeting shall from time to time determine, but the Council may in special cases dispense with the necessity for two years' standing. In every respect, except the payment of an annual subscription, a Life Member shall stand upon the same footing as an ordinary member. All moneys received from Life Members shall be dealt with and applied in such manner and form as a General Meeting shall from time to time determine.

Resolutions passed at a General Meeting held in February, 1888:—

The composition to be paid by Life Members under Article 8 for future annual subscriptions shall be fixed at £5 5s.

The following Rules shall apply to Life Membership:—

(a) All those desiring to become Life Members shall apply in writing to the Secretary, on forms to be furnished by him under the direction of the Council, the composition money accompanying the application as a deposit, and the names of all such applicants shall be published by direction of the Council, and they shall not become Life Members until the expiration of one calendar month after such publication, and then only if no member has objected to their election as Life Members. If any member so object the matter shall be considered and decided by the Council as in the case of the election of ordinary members, and should any application for life membership be rejected, the applicant's deposit money shall be forthwith returned.

(b) All gratuitous publications shall be sent only to such Life Members as shall annually express in writing their desire to receive them, and for this purpose a proper form of request shall be sent annually by the Secretary to every Life Member.

(c) Should a Life Member resign, or cease to be an amateur, or be expelled the Club, or otherwise cease to be a duly qualified member, no part of the life composition paid by him shall be returned to such Life Member.

(d) A separate account shall be kept of all moneys received from Life Members, to be called *The Life Membership* (Capital) *Account*, and the receipts shall be invested at interest by the Honorary Treasurer in the names of the Trustees nominated under Clause *(f)*, and no payment shall be made from it unless authorised by a majority of the members present and voting at a General Meeting, and then only after the General Reserve Fund is exhausted.

(e) The interest derived from the investments mentioned in Clause *(d)* shall be carried to, and form part of, the income of the Club.

(f) Four permanent Trustees shall be appointed by the Council, subject only to removal by death or by resolution of a General Meeting, in whose names all the said life membership moneys shall from time to time be invested, and no sum received under Article 8 shall remain uninvested for more than twelve months. These four Trustees shall be distinct from those of the General Reserve Fund.

Name.	*Degree or Title.*	*Address.*	*Local Cycling Club.*	*Offices formerly held in the C.T.C.*	*Offices now held in the C.T.C.*	*Date of joining the C.T.C.*
Hutchison, R. P.	Rev., M.A.	Martyr Worthy, Winchester, Hants.	—	—	—	1888.

IN THE SUNNY SOUTH.—A leisured member of the Council, who is noted for the mileage he contrives to pile up year by year, recently set out for a somewhat extended Continental trip, and as his experiences may interest those who think of covering the same ground we embody herein an extract from his last letter, dated Mentone, 12th November:—"I had a grand trip with only one day's rain from Dieppe, through Rouen, Chartres, Bourges, Orléans, Clermont-Ferrand, Le Puy, Nimes, Marseilles, to here, and only took train once, *i.e.*, when at the top of the pass from Auvergne, at a little miserable village, with a wretched public house, called Luc. It rained so heavily that, as I could not stop in such a place, where I could not even get a newspaper, I trained to Calais, but two days after, it being fine, I trained up to the top of the pass at Labastide Station, and had a run down of some forty miles through the finest scenery I had yet seen, and from about 4500 feet. The northern slope is dull and uninteresting, like the eastern slope of the Rockies. It ends with a vast marsh on both sides of the road, and it is only from seeing mountains below that one realises one is on a mountain. The southern slope, however, is very grand, and two views impressed me almost as much as anything I have ever seen. The ascent from St. George d'Aunac to Fix St. Genets is fourteen kilometres long. That from Le Puy through Costaros to just above Pradelles, near which is Luc, is thirty-two kilometres continuous, but so gradual, that even I, with the help of my two-speed gear could ride all the way. I have been rather disappointed in French roads. They are certainly good, but not better than a first-class English road—say from Dorchester to Southampton *viâ* Puddletown. It was very bad approaching Nimes; the best bit, and like marble, is between Tarascon and Salon. After that it begins to be bad, and was bad most of the way from Marseilles to Nice—very bad, lumpy, and uncared for between Cannes and Nice; three times in that bit I lost my pedals, and a road must be bad for me to do that. The descent of the L'Esterel to Cannes is dangerously bad from its holes. The ascent on the western side is exceedingly good. I believe it is good from Nice here, and shall try it I hope in a few days. From here to Genoa it is bad—indeed, I don't know how to manage about my luggage in Italy, as from all accounts I outstrip the baggage vitesse there, even by grand vitesse. The food in the commonest little auberge in France was wonderfully good and cheap till I got to about Nimes, when everything began to be permeated with that beastly garlic. Now I have got through the garlic country. I have kept notes of the journey and bought photographs which may come in for the *Gazette* hereafter." Writing a week later from Alassio our correspondent adds:—"The road from San Remo to Oneglia is bad. From Oneglia here good, but Italy, except in places frequented by English, is not fit for an Englishman to travel in, and the people one sees at once are an inferior race to the French. They are brutal and stupid. The costers never get out of the way and generally abuse one. I expect I shall get struck before I leave the place. The Marseillais are not a pleasant race, but these people have all their malevolence without their intelligence. I only found the famed Riviera beautiful between Nice and Mentone. The 35 miles bit between San Remo and here is most uninteresting except for the sea the whole way; but I made most lovely trips inland up the valleys. After all it is not fair to judge Italy from this corner of it any more than it would be to judge England from the savages of South Wales and the natives of the woollen mills in England. People tell me I ought to carry a revolver, but I won't; besides it is illegal. The Government can't suppress the brigands, yet it forbids one to carry a pistol for defence. There is no coin, only dirty bits of paper."

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