

The Motor

Vol. 16.—No. 417. 28th December, 1909.

An Appreciation; or, The Story of Our Motor Tour.

LITTLE Miss Gooseberry, was invited to the Bungalow to go on another motor tour with Princess Clare and her devoted Shover, V.O., D.S.O. Often in the winter's twilight, from my inglenook, while faggots crackled, spluttered and burnt brightly, and shadows danced on the walls, have I roamed back to holidays spent in Ireland in a blue motorcar. I have thought of the drives in Connemara; when the Shover first won his laurels. I have mustered my best courage for a drive over a desolate and, to us, unknown, road in the pitch dark and pouring rain from that "mirage" city of Ballyconelly, down the steep, winding descent to Ardbear Bay, through a black and haunted wood and up the badly-lighted Bond Street of Clifden. little more than a Sicilian donkey track, where we arrived drenched, hungry and triumphant at 11 p.m. I have steered memory's bark, not across Styx, but down a most tortuous and twirling road, deservedly marked with blue crosses by Mecredy, across some very steep hills between Lough Mask and Lough Nafaoey, amid the scowls of the Partry Mountains.

Again I have thought of Kerry. I have sunned myself in the purple hazes of Purple and Tomies Mountains, and by the blue bays of Bantry and Berehaven, and cooled down in the wooded creeks of Parknasilla. I have remounted with the thrill of victory known to the motorist and Alpine climber those danger hills and feats of the Kerry country, strained every nerve on the windy Gap, cooled the fevered engines on the Letterfinish Pass, enjoyed the "pleasures of the height" above that "Menagerie" of islands from the top of Coomakista, and on the Cliffs at Mountain Stage. I have drunk again those teas on Releigh Bridge amid the hurling and dancing of Kerry peasants, on the rocks above Kilmakilloge Harbour, where the turquoise sea rivalled the dazzling, if dimmer, recollection of the sea from Monte Pellegrino, and on the flowering banks, near Dromore Castle, which make the Kerry automobilist feel, like the people in the "Lotus land," that "it is always afternoon."

The prospect of another tour was, therefore, most attractive, and if this sketch should by chance fall into the hands of one to whom sunrises from the Diavolezza, sunsets on Monte Rosa, moonlight evenings at Capri, tea picnics at S. Niccoletto sul Lido, or expeditions in a salt boat down the Traun are too far off; and yet one who

does not want a common-place holiday; who is weary of English dust, of the finger post at every turn, of always going right because he cannot go wrong; who likes a smack of adventure and does not mind a little rain and a few bad roads and an occasional indifferent inn, let him, like Obadiah the son of Zechariah, who followed his friend to the Quaker's wedding, only with less solemn face, "follow me."

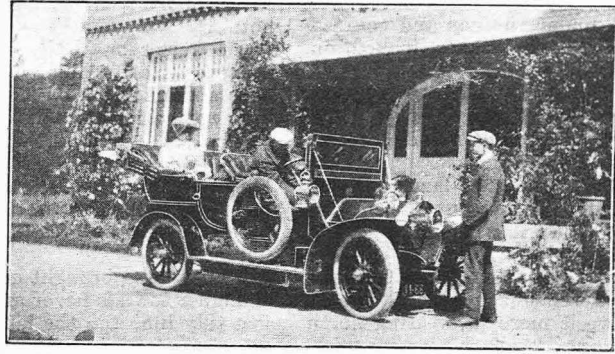
It was the same car, the blue one, the same party, the Princess, Masterman Ready, Little Miss Gooseberry, and San Martino, the devout boy.

The Princess was an expert automobilist, and planned the route and provided the provisions with the strategy and forethought worthy of a graduate for a "Peary" enterprise, neither did the tactics prove false nor the cruse of oil fail. The Shover shoved with the courage

and promptitude of a Wolff or a Napier, the eye of a Tell, and knew his car as his namesake knew his ship. The devout boy had few characteristics, so, like the man with no history, I suppose he was happy. He was no enthusiastic traveller, but a good cleaner and polisher, wore the correct face for Sunday Mass, would give his cloak to the beggar, or do anything for you with alacrity except ask the way, to which the answer was sure to be "straight on," when within a stone's throw there were a hundred turns.

Little Miss Gooseberry had nothing to do but enjoy the privilege of the "leisured classes" and kodak the scenery upon her memory and the film. The Shover had unkindly made her responsible for the weather, but in Ireland how could she be held accountable for that!

At last the day dawned for the start, and we felt very smart with new tyres, and speckless paint, and shining plate, and the R.A.C. badge to add to our distinction. Neither were we whitened sepulchres. For nights we had dreamed of engines, cylinders, valves, brakes, accumulator, accelerator, speedometer, and days of toil had put our inside into splendid working order, and we were equipped this year with a magneto which made such a vast difference to the going of the car. Thus our old friends the tin boxes, strapped on behind, and Masterman Ready's bag at the Devout's feet, containing all we required for the expedition, save perhaps a ball outfit, which we might have donned in the giddy ballrooms at Rosapenna, and well provided with the usual number of



The start from Recess.

AN APPRECIATION.—Contd.

rugs and ulsters, umbrellas, parasols, tea baskets and provisions, books, maps, and emergency tyres we set forth.

Past experiences made us look forward, but still it was always with a pang of regret that we left the Bungalow of the Burren guarded by those terraced limestone hills, a country bleak, bare and sparsely inhabited, wild and cruel when the wind howls, and the sea roars and flings its spray against Black Head; weird and eerie when the moon is "on her throne," and lights up the stone seats of the "amphitheatre," inviting all spectators to take their places to witness some great combat on the sea; and yet, withal, serene and peaceful on a midsummer afternoon when the sea is blue and the heat hazes hover over the coast of Galway, and an easterly breeze wafts the boat with an orange sail swiftly across to the Aran Islands, and the remains of your tea on the rocks is carried off for you by a band of little Burren ruffians, captained by a small brigand in scarlet coat and slouch hat, and without shoes and stockings, to whom strawberries and cake are an unknown delight.

* * * *

First Day.—We were bound on this, the first day of our tour, for Recess. We might have followed the magnificent coast road to Ballyvaughan and thence to Kinnvarra, Kilcolgan and Gaiway, but important business took us to Ennis, so our route was as follows:—

The Bungalow to Ennis	30 miles.
Ennis to Galway	... 40 "
Galway to Recess	... 35 "

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For a few miles we ran along the coast, and then climbed the hill to Lisdoonvarna by a well-engineered road of excellent surface, past the picturesque ruin of Ballynalackan Castle, which, on the shoulder of the hill, with its background of wood and command of the sea, is quite a landmark on this Burren coast. We left a visit to Lisdoonvarna and its sulphur springs for another time, and flew along to Ennistimon, a very "Palestrina" of dirt, where five mongrels ran under the car and courted their death and the miserable inhabitants looked on unmoved from their uninviting doors.

At Ennis we called in at the Court House and were kindly welcomed by the promoters of the "Feiss" and Industrial Exhibition, a most admirable undertaking of the Gaelic League, to revive Irish industries and the Irish language; and decorated with the harp and the shamrock on silk of true Irish blue, a souveur of this "Aonac an Clair," we went forward with all the good wishes of this warm-hearted people.

The grounds of Loughcutra Castle are beautiful, and from Oranmore to Galway I remember several pretty views of the bay, but the drive is more interesting north of Galway, especially near Lough Corrib, where we made our first tea encampment, to the amusement of the Galway peasants—men with their slouch hats, and women in bright scarlet petticoats, and thick shawls wrapped tightly round their heads, a goodly number often huddled together in their red carts.

Passing the pretty falls of Oughterard, and quickening the pace lest we should be tempted to stop and buy pearls, we were soon in Connemara, with its wild mountains and chains of lakes. Lake Shindilla looked dark and gloomy and clouds hung low on the Corcogemore Mountains, but we were without rain all day and the roads were fairly good and dry.

It is always a satisfaction in Ireland not to run into a prouetting horse, capering calf, or gambolling ass, and we dodged many such stray beasts on that first drive, and passed many a scared Phaeton pulling at the reins of his fiery chariot laden with turf, pigs, or cabbages, and Masterman Ready received many a smile and "Thank you, your honour," for his consideration to the driver and encouragement to the mule. We shall always be thankful, too, that we broke no springs on the Connemara culverts, when we remember the sad fate of a beautiful

car which left the Recess Hotel, in all its glory, the following day, and returned badly maimed in the evening.

Recess has many delights: a comfortable hotel with a pleasant garden; charming views of Glendalough and the Twelve Pins; good fishing within easy distance; and is a good centre for the motorist or cyclist to explore the wild glens of the Joyce country, the beauties of Ballynahinch, and of Western Connemara.

* * * *

Second Day.—The sun shone brightly, and we left Recess in the best of spirits for Sligo, our next resting-place.

Recess to Lenane	18 miles.
Lenane to Westport	20 "
Westport to Sligo	63 "
		101 "

The first 18 miles to Lenane were perfectly glorious—Derryclare and Lough Inagh, blue and sparkling, the Pins and the Maamturk Mountains clear and cloudless, as we dashed through the glen, and the descent to Killary Bay, with that beautiful view up the inlets guarded by rocks at the entrance, would awaken enthusiasm in the most incorrigible scoffer, who should complete his conversion in the grounds of Kylemore, at the foot of the Diamond Mountain, or in the wild country near Ballynakill Bay and Tully Mountain.

Our star, however, pointed northwards, and as we had a long road to travel we exchanged a passing bow with our old friend the Lakeside Hotel at Lenane, and chose the shortest route to Westport. The Falls of Aasleagh, Delphi, Doolough, and Louisburgh, which would have added 15 miles on to the day, we left for another time, and flew along the Eriff Valley, where the "Devil's Mother" and "Slip to Hell" wore a less evil air than before, and the Eriff River, hurrying through the valley, gleamed and glittered in the sunlight. We called a halt about lunch time in sight of Croagh Patrick, and then, with a strong sea breeze against us, we pressed on through this desolate valley to Westport.

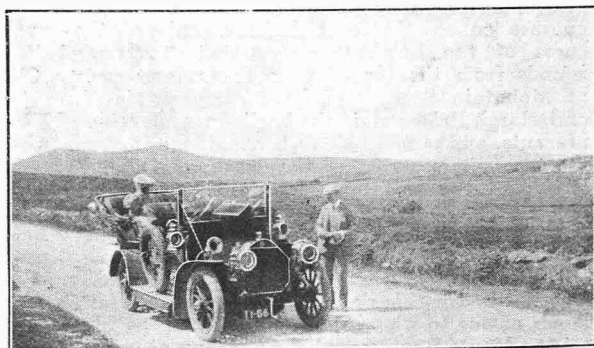
He to whom time is no object should run from here to Malleranny, on the coast of Mayo, and see Achill, about 37 miles from Westport, where he will find the best of hotels.

We were soon in the dirty town of Castlebar, taking a breather under a hedge between Bellavary and Swineford, encamping for tea on a bank near Tobercurry, threading our way through a labyrinth of donkey carts in that village. We had left the wild country of Connemara, with its rough stone cabins, where many a Mrs. Faberty lives with her family, the cow, the calf, and the poultry under the same shelter, and were in a much more commonplace, if less interesting, country with quite civilized houses.

The evening brought us through Collooney to Sligo, and though a town is never an ideal resting-place, the Victoria is a tidy inn, and the landlord will not let you pass without seeing all the beauties of the neighbourhood.

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Third Day.—It was our good fortune to see the beautiful window and cloisters of the Gothic Abbey of Sligo,



The Eriff Valley and Croagh Patrick.

AN APPRECIATION.—Contd.

and to run round Lough Gill, a beautiful little lake with many wooded promontories, a most picturesque old castle and a holy well visited by many pilgrims, and we thoroughly enjoyed this 24 miles spin, though the sun was not there and the clouds were low on the mountains.

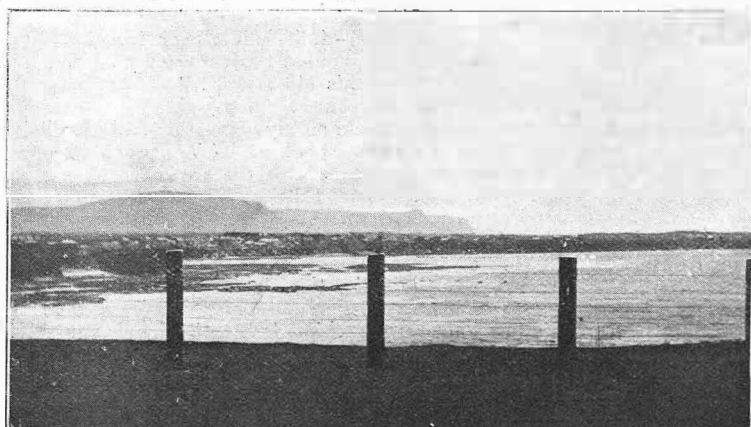
Back again to Sligo in a couple of hours we picked up our luggage and fired away to Bundoran, on Donegal Bay. It was a pretty drive. The mountains to the north of Lough Gill told of the storm to come, and by tea time it had begun to pelt. Nothing daunted we scaled a wall near Grange, and in the shelter of a wood the feast was outspread, and although by the end the tea was rather weak and the cake slightly moist, it was better than any tea in the "Ritz" or the "Carlton."

After this we put up the hood and were nearly blown over as we drove up in a gale to the Great Northern Hotel at Bundoran. The golfer may spend weeks at this excellent hotel in magnificent air; the motorist will do well not to hurry on till he has seen the Atlantic break against the Rougey Rocks, and Fairy Bridges, and has walked round the headlands on the downs towards Finner Strand, and while he gathers an appetite for his sumptuous dinner he may gather some plants for his garden rockery, and if he should want to pass quickly to a better place he should enjoy one night's purgatory in No. 17, where it is so hot no one has been known to serve more than that time. That at present was not our desire, so we enjoyed the most airy apartments and were fresh for our journey to Gweedore.

Fourth Day.—

Bundoran to Donegal	... 19 miles.
Donegal to Killibegs	... 18 "
Killibegs to Glenties...	... 19 "
Glenties to Gweedore	... 28 "
	84 "

This was the finest drive from Miss Gooseberry's point of view, though the Princess wept for her car, and Masterman Ready had a hard battle with constant storms and bad roads. It was a most exciting day; now we were crossing the bridge near the Salmon Leap at Ballyshannon; now sheltering in a scudding shower near Balintra; now dodging droves of cattle up the steep ascent of Mount Charles; now rounding the headlands of Donegal Bay towards Killibegs, now traversing a wild valley, between the Slieve League range and the Blue Stack Mountains, watered by two rivers which foamed and played and danced in the sun, which shone brightly between the driving showers.



Bundoran.

From Killibegs to Carrick and Glencolumbkille, in the heart of all the "Slieves," and over the Glengesh Pass to Ardara must be a very fine detour, but would require another day. We had a splendid spin down into Ardara from the top of this mountain valley, with magnificent views of the country to the north, and pulled well up the street of Ardara as steep as the side of a house. We were soon encamped for tea on the slope of a hill, on the road to Glenties, where Bridget, the owner of quite a model cottage, ran to the spring for our water, and where we defied Jupiter by drinking our first brew of tea on the bank, and dodged him by snatching up our cake and finishing under the hood.



Tea near Tobercurry.

On again and up and down the most stony and slushy roads from Glenties to Mass, up one particular hill where the wind and rain drove so hard I do not know how our Shover was able to drive, and these excitements were varied by occasional bursts of sunshine, and, after Mass, lovely sea views, particularly from the iron bridge which crosses Gweebarra Bay, where you look up the blue inlet with its little islands and wonder why you were born neither painter nor poet.

Again the landscape had changed; we were crossing a wild moorland with occasional cultivated patches of emerald green, contrasting with the myriad shades of the browns of the moors and blues of the mountains, and, branching off to the right before the village of Dugloe, we were flying over a much better road by chains of lakes, the Crotty Waterfall of the Gweedore River, and the Clady River to Gweedore. There we were at the haven where we would be that night, at the hotel, mostly frequented by fisher folk, with a pretty garden and close to the river, where from the rustic bridge you may recall the wooded creeks of the Cher, and from the meadows photograph Mount Errigal, which, like a great Dolomite, towers before you.

Fifth Day.—After her tub the car seemed none the worse for her journey and fit for much, but she could not climb Mount Errigal, and as on this occasion we were mere motorists without alpenstocks or fishing tackle we were quite ready to go on the next day to Rosapenna.

Gweedore to Rosapenna... 33 miles.

Soon we were waving a farewell to the Clady Valley, driving north to Falcarragh, with fine views of Mount Errigal and Mount Muckish, halting for a breather after the first long pull, sheltering in a wood from a few morning tears, buzzing along in a high wind to Dunfanaghy and playing hide-and-seek with Masterman Ready's cap in a field of oats; and now, the said cap having been finally recovered; we were approaching HORU

AN APPRECIATION.—Contd.

Head, enjoying the murmuring of the seas at the strands of Tramore and Rinlevan, watching the foaming frills of the bluest of seas at Sheepshaven, descending a most precipitous apology for a road at Cresslough, crossing the Dunally and Lackagh Rivers, and then, the back of our journey broken, running smoothly to Carrigart and arriving at full gallop in a tearing wind at the hotel at Rosapenna. Here a splendid wooden house brought from Norway offers you every comfort and luxury, and here by day you may golf on the links close to the hotel, or fish in Glen Lough or Salt Lough or Mulroy Bay, and by night you may dance on the

best of parquette floors while outside the tempest roars, and "the Atlantic's level powers cleave themselves into chasms."

Sixth Day.—On the road again the next day we ran back to Bundoran, this time across the interior of Donegal.

Rosapenna to Letterkenny...	24 miles.
Letterkenny to Stranolar ...	12 "
Stranolar to Donegal ...	18 "
Donegal to Bundoran ...	18 "
Detour by Lough Esk ...	2 "
	74 "

(To be concluded.)

FOGGARTY BE-FOGGED.

The True Story of an Actual Experience in the Fog.

A N impenetrable fog surrounded us. One of those nasty sudden palls which resists even the most scientifically-designed headlight until everything ahead takes the appearance of an illuminated drop curtain of smoke. The road and car had parted company more than once in the past half-hour, and a near shave with a telegraph pole convinced me that the situation was not one to be trifled with. Should we "heave to," as they say at sea, and resort to minute pumpings of the horn, as a warning to other users of the highway, or should we pursue this "blind-man's buff" procession of nerve-twanging thrills? These internal cogitations were cut short at a semi-colon by a faint development of a moving mass in the smoky curtain ahead.

"Something approaching on our side of the road!" shrieked my wife, who was acting as look-out.

Just then I could discern a horse's head, and, a faint light twinkling behind its ear, disclosed a brewer's dray. Above the clatter of brakes and gear changing, the yell I gave averted what must have been a terrible catastrophe, for the horse, whose old thing that he was, veered off from this unexpected tumult, and then both horse and car passed in safety.

"My dear," said I, assuming the calmness consistent with my position as head of the family, "this is where an exemplary lesson must be taught. I am going to waken that sleeping fool of a drayman by the aid of this!" holding up the first weapon which fell to my hand, an adjustable spanner.

"Oh, please," pleaded my soft-hearted spouse, "close those terrible jaws if you must use that awful thing. You might kill the poor man!"

However, a hurried examination of the dray disclosed nothing but bottles—and empty ones at that, worse luck!—for, not finding a head to break, I fancied exercising the spanner on a neck if I could only have found a bottle as tightly corked as my own feelings were at that precise moment.

The tinkle of cycle bells in the fog ahead warned me of a further approaching danger, and, as both car and dray now monopolized the entire road, I commanded the unseen to halt.

"Here's a nice thing," I expostulated to two cyclists. "A brewer's dray without drayman or beer, on a night like this, and on the wrong side of the road, too!"

"No beer!" wailed the first cyclist. "What a shame!" While the other one, who was evidently a teetotaler, muttered something about "criminal negligence."

"Bill," said the first cyclist again, "that must have been the driver we nearly bowled over a mile up the road."

"My young friends," I ventured to remark, "this vehicle is a public menace. We cannot allow the horse to proceed unattended. Do you, I entreat, seek this Bachanalian brewer, while I stand guard over the beer bottles. I assure you," I hastily added, noting their hesitation, "they are all empty!"

In twenty more minutes the sounds of a chorus, drunk-

only articulated, sounded through the fog: "She stood at the door—(hic)—a wel-com-hing him hin—(hic)—with a Ple—(hic)—drop o' gin!" and presently out of the fog, supported by the two cyclists, loomed a muddy, beulstered object, having no head covering, with bedraggled fog-sopped hair and an unkempt beard still glistening with an unlimited mixture of beer and snuff.

"A welcom-hin' him—(hic)—hin, with a li'le drop o' gin—(hic)—"

"Silence!" I roared as he lurched up, blinking in the acetylene light. "Silence! you drunken beast!"

"'Ere—(hic)—old 'ard, gov'nor; that's a nice remark to come from one—(hic)—gen'l'man to 'nother—(hic)—ain't it?"

"I repeat, you are drunk, and I shall charge you with being incapable and a public danger; your name, sir?"

"Foggarty—(hic)—thank ye kindly, sir; Ben Foggarty; at home second Toosdays—(hic); who may I have the pleasure—(hic)—of addressin'?"

"Confound your impudence. If your horse had not possessed more sense than you have, you scoundrel, my wife and I might have been smashed to bits!"

"What?—(hic)" exclaimed Foggarty, genuinely alarmed. "You ain't been 'urt, gov'nor—(hic). Don't say you've been 'urt."

"No, thank God—and your intelligent horse—we escaped what might have been a terrible accident!"

"Well, as you ain't 'urt, nor the missus—(hic)—bless 'er pretty face—(hic)—let's 'ave the chorus once again!"

"She stoo-hood at the do-h'or a-welcome-hing 'im hin, Welcome-hing 'im hin, welcome-hing 'im hin—"

"Tykes a bit o' doin' gov'nor.

"Welcome-hing 'im—(hic). Try it, gov'nor."

"What could you do with a man like this? My wife, I knew, would never forgive me if I carried out what was my obvious duty and charged Foggarty at the nearest police station, so, instead, I helped him on to his driver's perch, and, as he grasped the reins I handed to him, he said:

"You know—(hic)—if it 'adn't been for one of your—(hic)—motorcars, I shouldn't have lost my old Wellin'ton. Gawd—(hic)—bless his old stump!"

"Why, what happened?" I asked.

"Knocked me clean off my seat—(hic). Did, s'help me! and broke this arm. Look at it!" And he described a series of wild gyrations with the alleged broken member.

"Well, well," said I, stepping out of reach of the circling arm, and softened now with the humour of the situation. "Get safe home, Foggarty, and give old Wellington an extra measure of oats to-night. I sha'nt say anything to the police this time."

"Gawd bless you, gov'nor—(hic)—you're a toff! I can see you know—(hic)—what it is to be drunk yourself!"

"Gees up there, Wellington, blarst yer!"

And, as the fog enveloped all but the drunken chorus, "She stoo-hood at the do-hor a-welcome-hing 'im hin!" I hoped that Mrs. Foggarty would deal as charitably with Ben as I had done!

THE FIRST PUNCTURE.

THE car had gradually developed a certain unevenness in her running. This undesirable quality quickly increased to a bump, which, curiously enough, seemed to come from my side. I suggested a broken spring, but the Novice sneered and answered "Rough road."

A perfectly smooth stretch, however, demolished his theory, for the bump was still with us, insistent, annoying.

A glance at the back wheel solved the mystery, and as we pulled up the Novice muttered the dread word "Puncture!"

Now, I had often heard of this bugbear to motoring, but I was absolutely without experience on the subject. The Novice admitted that, so far, his career had been free from such mishaps. As regards the mode of procedure—well, he had studied it—in a book.

There was nothing to worry about. So he said. We should insert a fresh tube. It would only mean a delay of twenty minutes at the most. That was, unless I meant to stand there with my hands in my pockets. He didn't suppose I should be of much use, still I *might* do something. He wanted this, he wanted that—levers, jack, chalk, pump, new tube. Was I going to help or—?

His coat was off, his shirt sleeves rolled up, his hat tossed on one side. A moment later he was in the dust adjusting the jack. Meanwhile, I was strewing the road with levers, chalk, and other necessities required for the job.

Then there came a sudden distraction. A prolonged hooting, loud and frantic, caused us to glance behind. A large car was approaching, and the occupants seemed to be strangely excited.

It was quite a little while before we realized that our car occupied the centre of the narrow road, and thus formed an effectual blockade.

We got her out of the way somehow and the oncoming motor went by. There were four persons in it—all men. It was a moment when one yearned for the restraining influence of woman, for we were both too hot and irritated to stem the rush of abuse that poured from those four tongues.

That was the beginning.

Middy. Thirty miles from a place where lunch could be obtained. Fifteen minutes already gone, and the tyre untouched.

The outlook was not one that cheered.

However, she was jacked up again, and the cause of the mischief was soon revealed. Just an ordinary nail, that was dragged from its bed with the pliers.

Then attention centred on the tyre. It was new and built of rubber, leather, and a facing of large-headed studs. As regards its strength, toughness, and resiliency

we were soon to receive convincing testimony. The levers seemed to rebound from it like small shot from the back of a rhinoceros. The first attack was of a persuasive nature. Force was necessary, of course, but it must be rightly applied.

Still the monster did not yield.

I must admit that subsequent attacks lacked method; in fact, they degenerated into furious onslaughts of the kind adopted by savage tribes in time of war. Heated beyond endurance, goaded by blood-sucking insects that harried us on every side, wounded in many places, hungry—worse still, consumed by an awful thirst, we waged this unequal contest.

Time was no longer reckoned in minutes. From a mere skirmish the affair had grown into a bitter fight.

Several times sheer exhaustion caused us to throw ourselves under the hedge and rest. There, as we lay in the shade, we formulated fresh schemes of attack.

Often I looked wistfully at the spare wheel hung at the side of the car. The Novice's blood was up, however, and he would not hear of surrender.

His persistence met with well-deserved reward. The monster's hide began to yield. Possibly, continuous prodding and stabbing with the various implements had rendered it more pliable; at any rate, we dislodged it from its lair and released the tube.

This was encouraging. The tide had turned, and it was carrying us on to victory.

The new tube was coiled away like a harmless snake that seeks repose. Then came the work of persuading the monster to return to his bed. He went slowly, contesting every inch, but success was in sight, and we strove valiantly. The levers pounded his hide unmercifully. We hammered and punched, and punched and hammered, and so he went into captivity.

The pumping process winded us severely.

As we laboured, like criminals at the treadmill, the Novice's face betrayed lurking doubt and suspicion. From his dry lips came the one word "Nipped!" Painfully he explained its meaning, and we grew faint with fear.

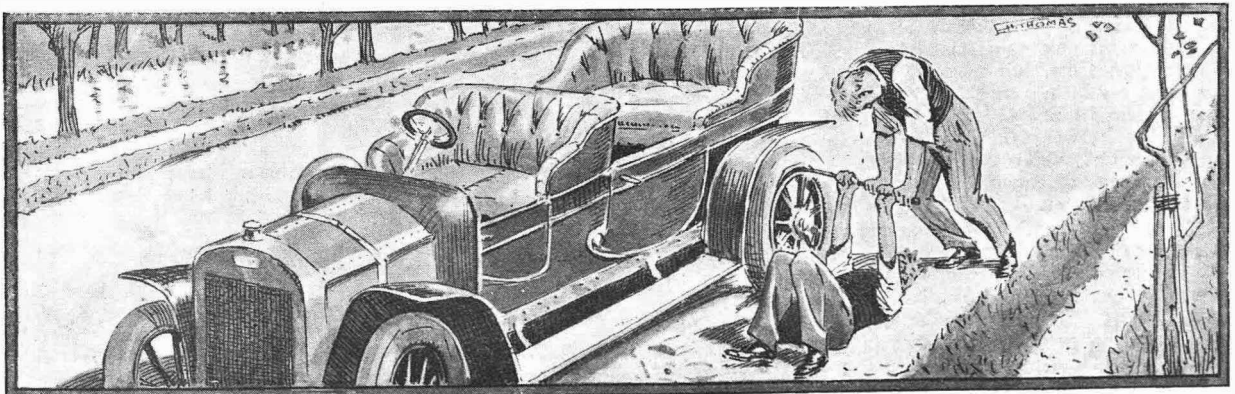
Yet so it was, and we sank under the hedge, steeped in dust and French chalk, too sick even to blame one another.

Then fortune relented. A car approached. At the wheel sat the chauffeur who had often been our guide and philosopher. Many contests had he engaged in with tyres, and in his grip the monster showed something of the docility of a kid glove on a lady's hand.

Like dogs we sat and licked our wounds, watching, marvelling, and as we watched we learned, and the text he taught us was this:

"Keep cool, and don't be in a hurry."

J. W. M.



"Subsequent attacks lacked method; in fact they degenerated into furious onslaughts."

AERIAL RECORDS OF 1909.

Year That Will Be Famous in History for the Remarkable Developments in Human Flight.

SUCH an aeronautical record had been set up on the last day of 1908 that it seemed likely the Wright Brothers would be able to maintain their supremacy for months to come. On 18th December, 1908, Wilbur Wright had flown for 1 hr. 54 min. 0 $\frac{3}{4}$ sec., covering an official distance of 62 miles for the Michelin Cup. Not satisfied with this, on the last day of the year he flew for 2 hrs. 20 min. 23 $\frac{1}{2}$ sec., being credited with 76 $\frac{1}{2}$ miles for the Michelin Cup. The second flight was not necessary in order to secure the trophy, for the only rivals, Henry Farman and Moore-Brabazon, did not even make an attempt to capture the cup.

Although the starting point of the year 1909 was a flight of over two hours' duration, the outlook was not very promising. The only really successful aeronauts were the Wright Brothers. Henry Farman had stopped short after a flight of three-quarters of an hour's duration and a cross-country trip from Mourmelon to Rheims. Dissatisfied with his slow progress, he had abandoned the Voisin Brothers to enter on the difficult task of creating a new type of flying machine. His former companion and rival, Leon Delagrangue, had failed to live up to expectations; Louis Blériot was still looked upon as the record tumbler, and Santos-Dumont was too spasmodic in his efforts to arouse either interest or hope.

The year closed, too, with the triumph of the biplane, and the complete setback of the monoplane. It is true that Louis Blériot had made a cross-country flight of 11 minutes' duration, that Santos-Dumont had made attempts, and that the Esnault-Pelterie machine had succeeded in rising on several occasions, but none of these performances were really convincing.

For the first few months of the year everybody seemed to be marking time. Wilbur Wright occupied himself with training his two pupils, Comte de Lambert and Paul Tissandier, at Pau, without attempting anything sensational. Farman was unheard of, and Delagrangue had disappeared. Louis Blériot appeared to have been influenced by the Wright campaign, and, instead of continuing his monoplane experiments, had commenced the construction of a two-passenger biplane, which, by the bye, was completed, but never brought out of the shops. Levasseur was building promising-looking monoplanes, but he was handicapped by having to give them to other men to test. Maurice Farman, the brother of Henry, made a few short flights at Buc, but these did not attract much attention. Mr. J. T. C. Moore-Brabazon, the first English aviator (if we allow the French to have Henry Farman), made his first important effort by a flight of about five kilometres on 28th January.

An important event happened on 23rd January, for on that day Louis Blériot made his first flight with the No. XI. machine, later destined to fly the English Channel. At that time, however, he was so uncertain as to the way it would act that he did not dare do more than run in a straight line over the Issy Plain. After several modifications it was taken to the aerodrome at Buc and experimented at the same time as No. X. type, now abandoned in favour of No. XII.

Aviators had commenced the year with the conviction that they must have better flying facilities. Thus, there was a general removal from the Issy-les-Moulineaux ground to the more commodious plain near Mourmelon, on the Chalons camp. Farman, Antoinette, Voisin, and Prince Bolatoff took up their quarters here. It was on this ground that Henry Farman made his last flight with the Voisin machine which had brought him into prominence. After having transformed it into a triplane, he had changed it back to a biplane and sold it to an Austrian syndicate.

The present type of Antoinette, or, more correctly, the

type which became famous in connection with the cross-Channel exploits, made its debut at Mourmelon in the month of February in the hands of René Demanest and Welferinger, both of whom succeeded in making short flights. It was not until the end of February that Hubert Latham mounted an aeroplane for the first time. His initial efforts were not very brilliant, and there was nothing to indicate that he would later become the most skilled pilot of this type of machine. His progress was made still slower by the fact that after each smash there was a long delay in repairing the machine.

It was not until the end of March that the Wright pupils, Comte de Lambert and Paul Tissandier, gave proof of their ability to handle a machine still considered acrobatic. After Wilbur Wright had flown before the King of England, at Pau, had trained Lieut. Calderara at Rome, had visited England and returned to America, his second pupil, Paul Tissandier gave excellent promise by flying for 1 hr. 2 min., thus putting up what was at once claimed as a French record, for it was longer than any other flight, except those made by Wilbur Wright and his brother Orville. The long-distance positions at this date were: Wilbur Wright, 2 hrs. 20 min. 23 sec.; Orville Wright, 1 hr. 15 min. 20 sec.; Paul Tissandier, 1 hr. 2 min.; and Henry Farman, 42 min.

Meanwhile, Hubert Latham had been quietly preparing at Mourmelon, and on 20th May showed his skill by winning a prize for a flight of 500 metres, and immediately

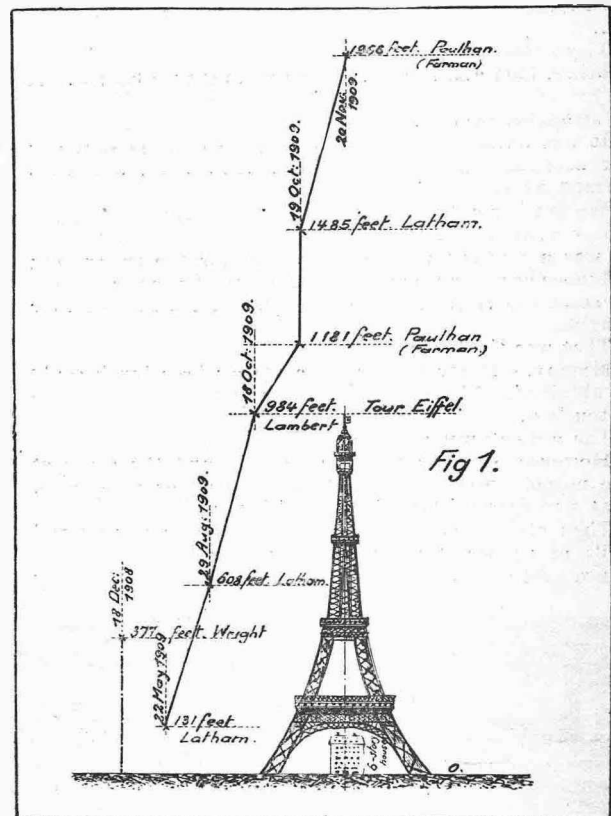


Fig. 1.—The heights attained by aeroplanists compared with the Eiffel Tower, the highest public monument in the World. Comte de Lambert's record is only recognized officially as the height of the Tower, 984 ft., although he rose considerably higher than this. Paulhan's record of 1,968 ft., although verified by French army officers, is not officially recognized, the highest official record being that of R. Latham with 1,495 ft. By way of comparison, a six-story dwelling-house is placed under the lower platform of the Tower. The drawing is to scale.

AERIAL RECORDS OF 1909.—Contd.

afterwards taking his companion, Demanest, over the same distance. From this day Latham was a fully-fledged aviator. He made two separate trips with a passenger on board, then broke away from the aerodrome to fly across country, showing his mastery of the machine by taking his hands off the control wheels. The French record esta-

Juvisy aerodrome for 50 min. 8 sec., only descending owing to the exhaustion of his oil supply.

The first half of the year had not only brought forth the successful Antoinette and Blériot monoplanes, but had at the same time seen the appearance of a new biplane built by Farman and flown by him, as well as the promise of several good aviators. Rougier and Jean Gobron had both made promising debuts on Voisin biplanes; Bunan-

Varilla had made some good flights without much ostentation; Cody had at last been successful in England; and on the other side of the Atlantic the Aerial Experiments Association, of which Glenn H. Curtiss was a leading figure, had at last achieved their object of creating a successful flying machine.

During the month of June a standard biplane was placed in the hands of a young mechanic for trial flights at Issy-les-Moulineaux. The young man was unknown to the outside world, and although Louis Paulhan had had a unique training, first with dirigible balloons and later in the aeroplane building shops, little attention was paid to his first efforts. In less than a month, however, the novice had become such a skilled aviator that he had broken the Tissandier record of 1 hr. 2 min., and almost reached Latham's standard. His time aloft was 1 hr. 7 min. 19 sec.

The first six months of the year had been devoted to preparation; realization was to be the feature of the remaining six. The eyes of the world were focussed on the English Channel by the announcement that Hubert Latham intended to fly to England. At the same time Comte de Lambert stepped forward, but the Russian with the American machine was received as coolly as the French-

man with the English name was received enthusiastically. The story of the flight to England is too well known to need recapitulation in detail. Latham attempted it on

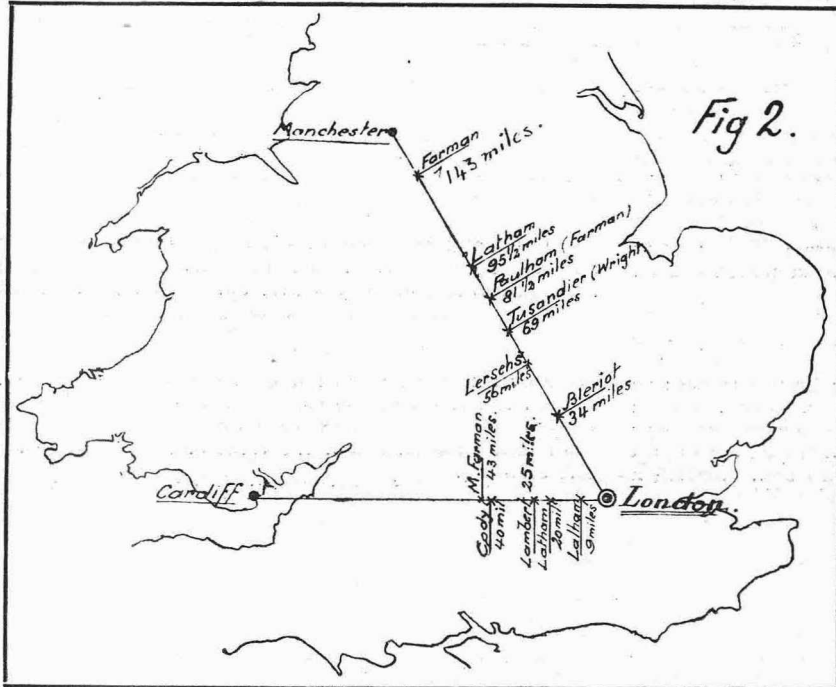


Fig. 2.—If, instead of flying in circles, during their record performances, the aeronauts had started from St. Paul's and steered in the direction of Manchester, they would have come down at the points indicated on the map. If the record cross-country flights had been made from London to Cardiff, the different landings would have been made as shown on the horizontal line.

blished by Tissandier was broken on 5th June, when Latham stayed in the air for 1 hr. 7 min. 37 sec. The battle of the French and the American school, of the monoplane and biplane, had commenced. Latham's first official cross-country flight was not made until 6th June, when he competed for and won the Goupy prize, which called for a minimum of five kilometres. In reality, he covered about 14 kilometres.

Since the production of his No. XI. in January, Louis Blériot had not been idle. He was convinced, after failures which would have disheartened more than an ordinary man, that he had evolved the right type of machine. He worked patiently at details, and on 25th June succeeded in flying 15 minutes, followed on the following day by a flight of 36 min. 55 1/2 sec. While tuning up his No. XI. Blériot had at the same time been perfecting a larger machine, known as the No. XII., which appeared to give even better results than the smaller model, but which was handicapped by the indifferent working of the large motor. It was on this machine that he succeeded in flying for the first time with a passenger, and on 8th June created a record by carrying two passengers at once. Some very good flights were made at the Douai meeting, but Blériot's record was established late on the Sunday evening of 4th July, when he remained over the

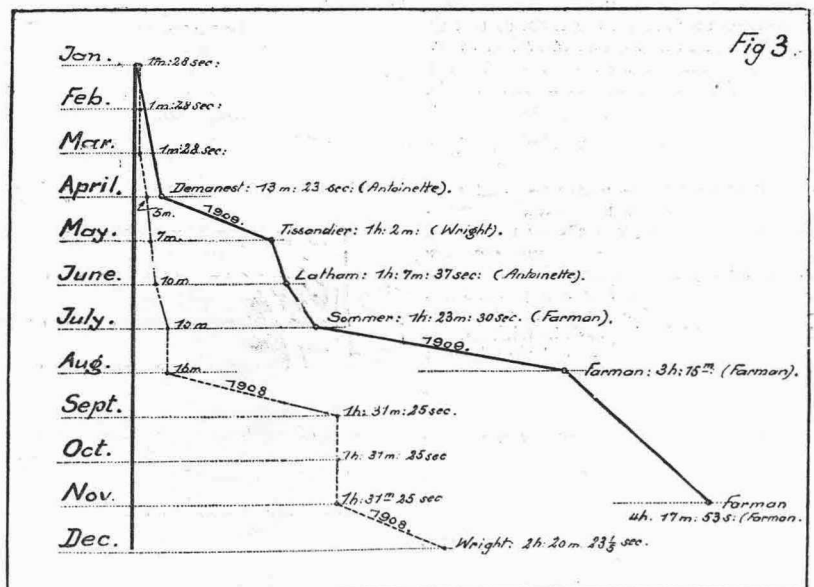


Fig. 3.—This diagram shows the progress made in endurance flights during the years 1908 and 1909, the solid line representing flights during the present year, and the dotted line those in 1908. It will be noted that it was not until the month of August that the Wright record, established on the last day of 1908, was beaten by Henry Farman. The longest flight to date is that of Henry Farman, which seems likely to stand as the record of the year.

AERIAL RECORDS OF 1909.—Contd.

19th July, and fell into the sea owing to the stoppage of his motor.

Bleriot, who had long nursed a desire to fly the Channel but had considerably kept away while his rival was on the spot, immediately travelled up to Calais, took advantage of a calm on the morning of Sunday, 25th July, and in a little more than half-an-hour had landed on the cliffs of Dover. Two days later Latham flew high over the grey mass of Griz Nez, only to again fall into the sea, when within a few hundred yards of the English coast.

While all other aviators had been forgotten in the excitement over the cross-Channel trips three other men had been quietly preparing for sensational flights. Farman had made such progress with the biplane of his own invention that on 19th July, the day Latham made the first attempt to fly to England, he was able to remain in the air 1 hr. 23 min., thus creating a new French record. Paullan was becoming more and more skilled, as was shown by a flight over a captive balloon placed 492 ft. from the ground.

On 4th July Roger Sommer, a sportsman who had dabbled in aeronautics, mounted a Farman biplane for the first time. On the 27th of the same month he flew for 1 hr. 23 min. 30 sec., beating the French record; on 1st August he increased the time to 1 hr. 50 min. 30 sec.; the following day he made a ten-mile trip across country; two days later he flew for 2 hrs. 10 min., and on 7th August remained in the air 2 hrs. 27 min. 15 sec., creating a world's record. At the time these flights did not attract much attention, for they were made very near the ground, and some of them were without official control. There is no reason, however, to doubt their genuineness.

The Rheims week was important not so much by reason of the distance covered as on account of the fact that for the first time different types of machines competed together and were required to perform according to a timetable. Under the stress of competition, flights were made under weather conditions that had previously been thought impossible. This meeting proved for the first time that the aeroplane was more than a fine-weather machine. Also, under the fear of competition, pilots rose to heights that had never previously been attempted by any other

aviator than Hubert Latham in his cross-Channel exploits. At Rheims the endurance record was carried up to 3 hrs. 15 min., thus beating the record established by Wilbur Wright on the last day of 1908. The total distance covered during the Rheims meeting, ignoring flights of less than six miles in length, is officially given as 1,530 miles, which is slightly more than half the usual steamship route from Liverpool to New York, or practically from Land's End to John o' Groats and return, as the crow flies. Latham covered a total of 353½ miles; Paulhan 189 miles; Farman 142 miles; De Lambert 119 miles.

The successful Rheims gathering was followed by a succession of meetings, none of which succeeded in coming up to the original. Real progress was made at Blackpool in flying in winds by comparison with which those at Rheims were mere zephyrs.

While the Juvisy meet was in progress Comte de Lambert quietly slipped away, flew towards Paris, rounded the Eiffel Tower at a height of considerably more than 1,000 ft., and returned to his starting point after an absence of one hour. This is certainly the most daring aeronautical feat of the year, for during half the time the aeroplane was over a thickly-populated district, and during the whole trip it maintained an altitude that had never before been reached by a flying machine. Such a flight, made by a man who had not been given to recklessness, was an exhibition of the confidence the pilot had in his machine, and must have been a forcible object-lesson to the military authorities of the value of the aeroplane for safe scouting.

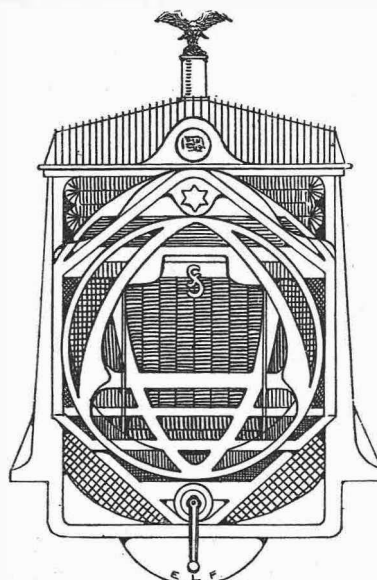
The closing months of the year have been remarkable for a series of high flights, during which De Lambert's record has been equalled by Latham, and certainly eclipsed by Paulhan. Progress has also been made in long-distance flying, for on 3rd November Henry Farman competed for the Michelin Cup, remaining in the air 4 hrs. 17 min. 53 sec., during which time he covered a distance of not less than 143 miles. Even if this record is not beaten before the end of the year, the progress made is still sufficient to cause satisfaction, the longest flight in 1908 having been of 2 hrs. 20 min. 23½ sec.

Cross-country flying is becoming more and more popular. Those who have indulged in it during the past 12 months are Col. Cody and M. Maurice Farman.

The Buggy in Australia.

A correspondent writes:—"There can be little doubt that the motor buggy has 'caught on' in Australia. Agents for these machines are selling them as fast as it is possible to do so, and in almost every case sales are effected long before the machines are landed, which has rarely been the case with any type of car up to date. Whilst in the country recently, I had a conversation with a Government stock inspector, who had recently purchased one of these machines, and who gave me his reasons for so doing. Price (£210) certainly played a very important part, but he also stated that in the course of his weekly rounds he had 14 rivers to cross with more or less sandy bottoms, which in times when much water was flowing would be impossible with an ordinary motorcar. He stated that he felt that motor buggies would be dangerous at any speed in excess of 20 miles per hour, but that as his own requirements, as far as he could see, would never require anything in excess of 15, he felt that his margin of safety was ample. On horseback or in a buggy he rarely attained a speed greater than five or six miles per hour. I cannot help thinking, therefore, that British manufacturers who desire to get their fair share of the rapidly increasing Australian motor trade should give this subject their careful consideration, as, apart from any other consideration, there is an advantage of 5 per cent. in the duty payable."

An interesting article on Co-operation, from the pen of Mr. Henry Sturmev, is unavoidably crowded out, but will appear next week.



A combination radiator, comprising some features of the radiators of most of the well-known makes of motorcars on the market. How many can you find?

French Exports.

"The Figaro" of 17th December is responsible for the statement that during the first 11 months of this year of 1909 the value of exports of automobiles amounts to 134 millions of francs—an amount which is 14 millions in excess of that for the corresponding period of 1908. England has been France's best customer by far in this respect, having taken value thereof to 58 millions. Belgium is a most indifferent second with 10 millions, Germany comes third (nine millions), and Algeria and the United States bracketed fourth (seven millions).

Argentine Racing.

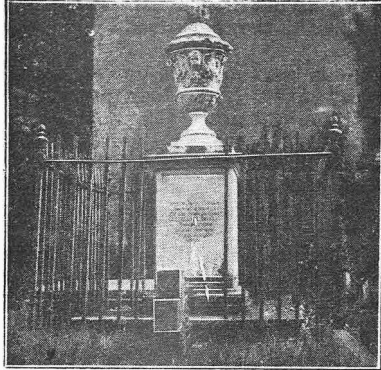
A remarkable calendar of races in the Argentine Republic has just been made public. Thus, in February, we have the Buenos Ayres-Rosario-Cordoba run of 900 kilom. for cars of all descriptions; £1,200, and the Pachus-Anchorena Cup. March, the Mardel Plata circuit of 600 kilom. for all cars; £2,000 and the Mardel Plata Cup. April, the Grand Prix del Plata of 100 kilom., for all cars; £2,000 and a cup. May, the Exhibition Grand Prix, for all cars, on a closed circuit. The date, the distance, and the value of the prize are not settled yet.

"Motor Cycling"

TUESDAY, this week, owing to the Christmas holidays.
MONDAYS as a rule.

THINGS ABOUT.

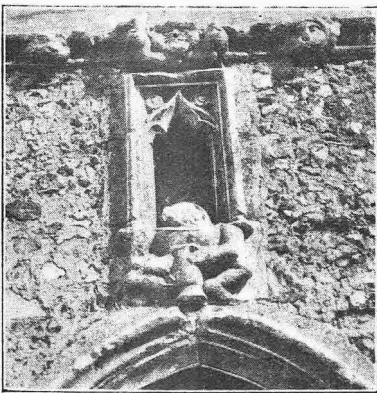
The tomb of William Glanville, at Wotton, near Dorking. He died in 1718, and by his will directed that on 2nd February in each year five poor boys of the parish of Wotton, under the age of 16, shall attend in the churchyard, and, placing their hands on his gravestone, repeat by heart the Apostles' Creed, the Lord's Prayer, and a chapter from



Curious February custom.

Corinthians. For doing this each boy was to receive the sum of £2. The custom is regularly observed, and the occasion is locally known as "Forty Shilling Day." Needless to say, the function attracts a large number of visitors from all parts of the county.

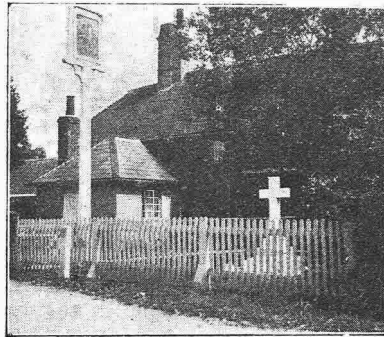
On leaving Gravesend, en route for Canterbury, a prominent landmark is Chalk Church, which stands all by itself on the bleak hill-side quite close to the near side of the road. The observant traveller will see over the porch and vestibule the queer sculptured figure shown in the photograph. Dickens,



Dickens's jolly monk.

when he lived at Gads Hill, which is close by, often used to stroll about here, and loved to have "greeting with that comical old monk who for some incomprehensible reason sits carved in stone, cross-legged, with a jovial pot, over the porch of the sacred edifice." The grotesque figure is supposed to represent a "Church Ale," bequeathed to the village by some former benefactor.

In the front garden of the George and Dragon Inn, at Dragon's Green, Sussex, is a startling object in the shape



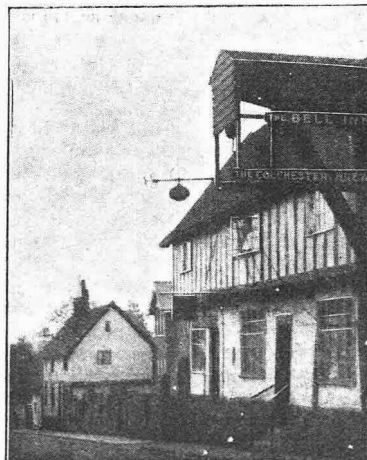
Tomb in a front garden.

of a marble tomb, which has stood alongside the signpost for many years past. It is to the memory of the landlord's son, who was drowned. The stone was originally set up in the parish burial ground, but the authorities took exception to a portion of the inscription, and had it removed, so the landlord had it placed in front of his house. At the foot of the tomb is a board explaining the whole dispute.



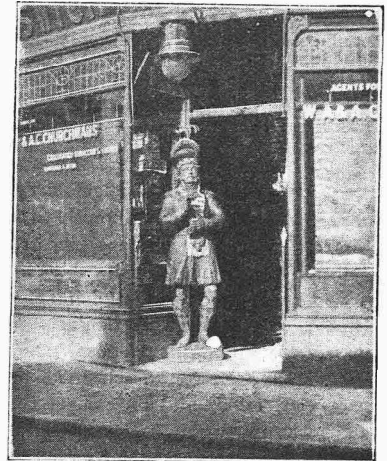
Ancient stocks in the market square, Ripley, Yorks.

At Woodbridge, in Suffolk, is still to be seen an old 16th century weighbridge, which projects across the thoroughfare in which it is situated. This is said to be the finest weighbridge of its kind in the country, and is ornamented by some fine old English ironwork, which is universally admired by connoisseurs.



An old weighbridge.

At Ipswich, the quaint figure of a Highlander (practically a replica of the well-known Tottenham Court Road Highlander) can be seen at the entrance to a tobacconist's shop. It is extremely life-like, and attracts great attention.



Ipswich Highlander.

In the garage attached to the New Inn, Farnborough, on the Great Dover Road, is preserved an old oak coffin which was made by the village carpenter of Downe in 1832 for the reception of the remains of Charles Darwin, the great naturalist. The author of the "Origin of Species," who ordered the coffin on his deathbed, lay in it for over 24 hours,



A grim relic.

and his body was then removed into another coffin for sepulture in Westminster Abbey. This grim relic is for sale, and, fitted with shelves, would make a unique corner cupboard for a scientific gentleman.

[No section of THE MOTOR has produced more interesting photographs than this. We shall be glad to consider photos of really interesting features of the roadside, whether submitted by amateur or professional photographers.]

AT RANDOM

BY AUTOMAN

How History is Made.

ON the morning which saw the concluding portion of my last week's ruminations committed to paper I was in London, and, having entrusted them to a messenger-boy to deliver into the hands of the Editors, I sallied forth to sample the air and see what prospects of incident the day afforded. The roads had not had a couple of dry days in which to recover from a whole week's deluge, and it befell that I shortly met a friend, who seemed particularly pleased to see me, and immediately made a proposal which promised adventure.

He had been seized with the desire to possess a car; had seen, tried, and purchased the previous day a small second-hand two-seater "to begin with," did not know how to drive, and would I take it down to Bath for him, during a stay at which city of health-giving waters, incomparable buns and "only original" Oliver biscuits, he proposed to acquire the arts of driving and manipulation.

I temporized by suggesting it would be nice to see the car, and was conducted to the garage where it reposed—as spick and span-looking as any little vehicle I have seen for a long time, and comfortably equipped with hood and screen, my friend being a judge of comfort, if he isn't of cars. So I undertook the expedition then and there, and my friend, who could not leave Town that day, arranged to join me in the West on the following one. I didn't say so, but I don't think he had much confidence in my getting through, my belief being that he was suffering from the reaction following a burst of enthusiasm, and was repenting him of the evil step he had taken under the impression that the price paid for the car could not possibly buy anything that could be trusted to straightaway accomplish a journey of over 100 miles. However, I had cursorily looked over the car and started up the engine—a two-cylinder one—and had come to the conclusion that by some fluke he had managed to pick out a fairly sound car—"fools step in," etc.

So we parted till the morrow, and I had a glance round with an oilcan, saw the petrol tank and lubricator filled, assured myself that all seemed well with the tyres, applied a voltmeter to the accumulators, and, after an early lunch, and a hurried pack, set forth from before the same portals which have seen the start for many such desperate automobile enterprises.

On the Bath Road.

At Knightsbridge the traffic thinned, and the little car, bowling merrily along to Kensington, emerged from the swirl of taxis carrying rinkers to the erstwhile scene of the eighth International Motor Show, and so into the narrow and trammy King Street of Hammersmith. I know no main road better than the Bath one, but had not been along it for several months, and was interested to observe its state and condition after an inauspicious summer and autumn such as we have been favoured with this year.

The car having a short wheelbase and pretty stiff springs, I was not long in discovering that the tram-traversed section from Chiswick onwards has deteriorated, and is full of nasty, bumpy holes and uneven wood paving. In the Straits of Brentford I came up with the inevitable procession of manure wagons, and, as the tramway was receiving the attentions of a gang of British

workmen, progress here was more than sufficiently slow to facilitate full enjoyment of the salubrious by-products of the local industry.

I don't deery a tram-laid road as some do, for, in my opinion, the wood paving in which the lines are usually laid, provides a better running surface than the average suburban macadam road, and I can put up with trancars so long as the thoroughfare is reasonably wide, but the major portion of the wood paving all the way down to Hounslow cannot even be described as "fair to moderate" at the present time.

On emerging from Hounslow, the little car bounded from the wood on to the macadam which, in multitudinous varieties, mostly bad, was to be my path for nearly all the rest of the journey, but it was pleasing to find it practically dry.

I devoted myself to studying the running of the car, which was excellent, and was wondering how far I should get before lighting-up time, when my thoughts naturally turned to the lamps. So did my eyes, and what I saw was trouble ahead in this direction, for both the side lamps were shedding a periodical drop of paraffin from the bottoms of their containers, and the condition of the running footboards indicated a pretty steady leak in both of them! There was no head lamp!

Fate appears to have marked me out for lamp troubles these days. It seemed inconceivable that within an hour of writing what I did on the subject of lamps last week I could have been tempted to set out on a winter's afternoon for a 100-mile journey in a car having leaky side lamps and no headlight at all!

More Lamp Troubles.

However, I had plenty of time in which to review the situation, and as the car pegged along past the level crossing and through Colnbrook and on to Sloppy Slough, where the street crossings provide an automatically-enforced speed limit of at most 10 miles an hour—to all who have once bumped over them at anything higher. I decided not to stop for tinkering until the shades of darkness warned me of the necessity of doing something. At Maidenhead the hill leading out of the town called for second speed, and the bumpy approach to Twyford made a crawl imperative. I am surprised that not more of this main road is treated with tarred material, because these sections which have been properly done, like a large part of that from Slough to Maidenhead, are so much superior to the rest as to present a strong case for Tarmac, or whatever it is that they favour.

Reading is one of the few places of any size that it does not take the through traveller long to negotiate, and I was soon running along the Kennet Valley and past the quaint old Berkshire villages of Theale, Woolhampton, and Thatcham. The gravel roads around Newbury are always sticky; I know of none that seem to take longer to dry in winter, or which slow a car more when wet, though Newbury is an interesting old town, and on race days, which are fairly numerous, its now famous race-course attracts an endless procession of cars of all sorts, shapes, and sizes. But I was all for pushing on on this occasion, and just made Hungerford as the need for lighting up became imperative.

Here I consulted Mr. Stradling's man, who filled and lit the lamps, and we then took observations of their behaviour. The tail lamp was all right, being of the same brand which I have had occasion to mention my confidence in before; the near side lamp burned, but gave

AT RANDOM—Contd.

no light. The offside one seemed to be of the "fixed ignition" type; the wick was so low it only gave a glimmer, and no amount of force or persuasion availed to turn it up. So I inspected the stock of bicycle lamps in the depot and selected a sort of young Rushmore with the correct pattern of split front glasses complete and a separate acetylene generator, and with the assistance of some extra tubing this outfit was fixed to the off front wing-stay, so that after about twenty minutes' delay I went on my way rejoicing, and slid into the outer darkness with a very fair illumination in front.

Of the Rest of the Run.

Not far out of Hungerford I met another light which, until quite close, I had sized up as a bicycle, but when nearly abreast it turned out to be another car, though with only a near-side lamp burning, a dangerous practice at any time, and especially on such an inky night as this particular one. Evidently other people get trouble with oil lamps, too, sometimes!

Savernake Forest was lonely and gloomy, abandoned chiefly to the deer, some of which crossed the road so nearly in front of me that I had to pull up, and as I soon after met a constable it was well he did not find me in the act of settling a buck with a tyre lever, as might have been necessary with a collision. Down the hill into Marlborough, where the town clock showed a quarter-past six, and along its quaint, wide, old street, past Stanley Weyman's Castle Inn, and out by the Col-

lege to the road which follows the undulations of the wide Down country, sheltering a village under each fold of its expanse.

It blew cold up by the Grey Wetheas, and my head lamp went out just by Silbury Hill, but a match put that right again, as I had only pinched the gas tubing. Leaving behind the bright lights of Sam Darling's training stables at Beckhampton, I was on what was the coldest bit of road between London and Bath in the old coaching days—and is so still, it being a welcome relief to slip down past the White Horse and the hill of Labour-in-Vain to where Calne, of bacon fame, enjoys shelter from the Downland wind. And so to Chippenham and over the Avon there by the self-same bridge which accommodated pack horses in Alfred's time, and now shone under the electric light which denotes the span of the centuries.

At top of the crest which covers Box Tunnel, some six miles further on, the lights of Bean Nash's city in the valley ahead seemed to give fresh heart to the little engine, which was pulling me so well, and soon I was among the tramlines again, to find myself by eight o'clock enjoying the warmth of a generous fire in the lounge of that most excellent hotel, the Empire—only I can't think how they came to build such a place so recently without a garage on the premises. But perhaps they are going to put one where those ugly buildings now obstruct the view from the terrace.

Anyhow, I was well satisfied for the nonce; a second-hand car, bought like a pig in a poke, had accomplished without incident what a few years ago one would have been bold to attempt on a new one. AUTOMAN.

Honours for the "Continental."

We learn that the German Emperor has granted the Gold State Medal for industrial achievement to the "Continental Caoutchouc-and-Gutta-Percha-Compagnie," Hanover. Regierungs-Präsident von Philipsborn, accompanied by Geheimer Regierungsrat von Rosnowski, personally handed over the medal to the three managing directors of the great firm, namely, Kommerzienrat Seligmann, Dr. Gerlach and Herr Willy Tischbein, in the directors' room, and heartily congratulated the company on their success, not only in the home, but also in the international market. Von Philipsborn seized the occasion to recognize in cordial words the firm's funds and institutions for the welfare of their work-people. Of the three directors, Herr Willy Tischbein is the best known in the trade. He is a keen business man, and invariably takes a prominent part in organizing motor shows held under the auspices of the Imperial Motor Club and the German Automobile Makers' Association.

Amongst reference books, "Who's Who" (published by Messrs. Black at 10s. net) has long since taken a prominent and permanent place. The issue for 1910 comprises within its covers no fewer than 23,000 biographies of everybody who is anybody at the present day. Nearly all must be interested in the salient facts in the lives of so many prominent people, and some there are to whom their business or profession must make the book indispensable. In the "Who's Who Year Book" (1s. net), which forms a handy key to the larger work, motorists will find, amongst other useful tables, a complete list of motorcar signs. Messrs. Black are also responsible for the publication of several other standard year books, including the "Englishwoman's" (2s. 6d. net), the "Writers' and Artists'" (1s. net), and the "Billiard Year Book" (1s. net).

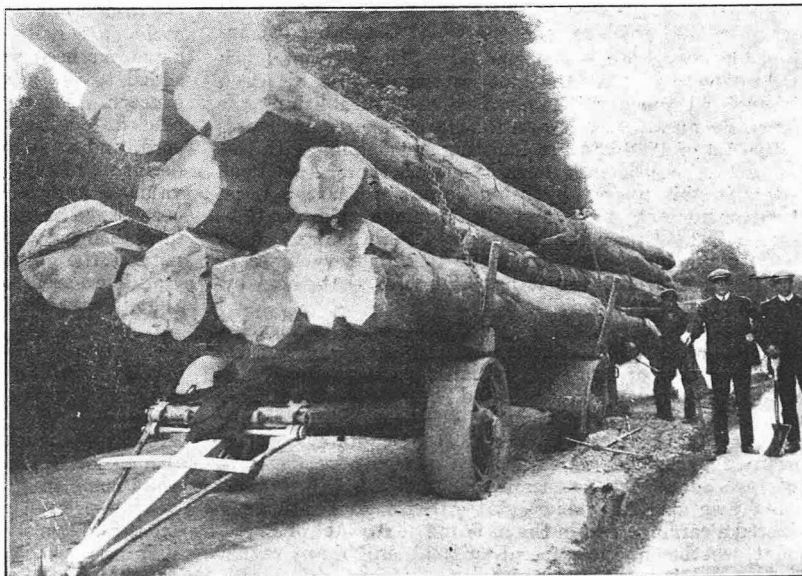
"MOTOR CYCLING" is published one day late this week: To-day, Tuesday.

Hard to Please.

Some people are never satisfied with the automobile regulations, be they ever so rigorous; and this fact receives exemplification in a petition by the Brandenburg Agricultural Chamber to the Prussian Minister of the Interior in favour of greater prominence being given to the identification plates fixed to automobiles. The petitioners want the numbers to be some 10 in. long and occupy a position nearly 5 ft. from the ground! Licence numbers are now attached to the rear panelling, but the petitioners, who are nothing if not modest in their demands, also require that the numbers should appear at each side of the body into the bargain. But

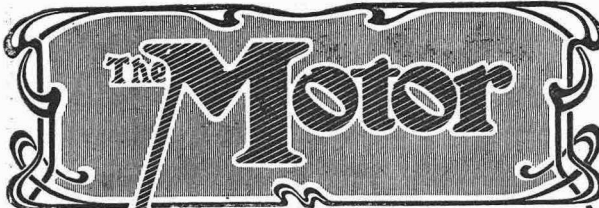
while they were about it, the petitioners might have asked that the entire back panel should be one vast identification plate.

In greater part due to ourselves, which we regret, and in lesser part due to an error in the letter we received from the Société Anonyme des Automobiles Peugeot, a mistake was made in giving what, strangely enough, purported to be the corrected price of the 12-15 h.p. four-cylinder Peugeot car. The figures should have been reversed, that is, the price of the car is £352, instead of £342. Further, it will be noticed that the h.p. of the car is 12-15, and not 12-16, as was stated.



THE REAL ROAD BREAKERS.

A trailer with nine felled trees, the weight of which caused the rear wheels to sink into the road, as shown in the photograph.



The sale of "The Motor" to the public through ordinary trade channels is claimed to be the largest of any motor-car journal in the World.

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Lighting Legislation.

A MATTER which requires consideration in any future legislation is the lighting of cars. The Local Government Board requires a single light on the off-side, and many motorists are under the impression that by complying with this requirement nothing further can be asked of them. It is seldom in any case that anybody uses a single light, but at the same time it is quite possible to be out with side lights only, and as lighting-up time comes to find that one of the lamps is inoperative. In these circumstances the driver is safe in proceeding with the single light in most districts, but in a few places local by-laws insist upon two lights being carried, despite the provisions of the Act of 1896 and the Lights on Vehicles Act, 1907.

Not only do a number of county and town councils stipulate for two front lights to be carried, but in at least one case they claim the right to alter the period after sunset at which lights must be lit.

A correspondent has recently raised the point with regard to Staffordshire, and the Chief Constable has invited him to come and test the law. There is not much doubt, however, that the motorist would lose his case, although an appeal might be of value in establishing the law on the question. Despite the clearly-expressed clauses of the Act of 1896 and the Lighting Act dealing with this point, local authorities have rendered these Acts dead letters in this respect by using powers under the Local Government Act, 1888, and the Municipal Corporations Act of 1882. Under the former the Staffordshire County Council, among others, has made it obligatory to carry two lights in front, and it has been held that these by-laws are not *ultra vires*.

The Lights on Vehicles Act, 1907, excepts bicycles, tricycles, velocipedes, motorcars, traction engines, or vehicles drawn or propelled by hand, and also states that all existing by-laws are repealed, but those made after may increase the obligations of vehicles, but cannot be contrary to the Act. In the 1896 Act, however, there occurs a paragraph which those responsible for motoring interests should have remembered when the Lighting Act was drawn up. This clause states that a car is to be considered a carriage within the meaning of any Act of Parliament, whether public, general, or local, and of any regulation or by-law made under any Act.

The question may seem an unimportant one, but the liberties of the motorist are not so extensive that he can afford to throw away any privileges.

In this particular case there is the impossibility of any

motorist remembering where he may carry one light or where he must have two. Such by-laws applied to a vehicle which may pass through a score of areas under the control of a town or county council in 24 hours are obviously absurd, and their imposition savours of officialism tinged with prejudice.

Shock Absorbers.

THOSE of our readers who, in addition to examining the illustrations of shock absorbers contained in this, our 8th selection of the series of "Comparisons of Styles and Methods," also peruse the article on the same subject, will find that, in the course of his remarks, the author propounds a rather novel and uncommon theory with reference to the action of shock absorbers relative to the wear of tyres. It is scarcely necessary for us to point out that the conclusion to which his argument tends is diametrically opposed to the generally-accepted ideas on the subject, as it is very commonly agreed that shock absorbers were primarily introduced to assist in keeping the wheels of racing cars on the ground, and in practice they undoubtedly do so. Nevertheless, the argument he adduces in favour of his theory that the opposite result should occur appears to be a fairly sound and reasonable proposition. It would be interesting to know the opinions of our readers as to where, if anywhere, the argument is fallacious.

A Sporting Match.

THE match between the 15 h.p. Star and the 20 h.p. Vauxhall that took place on Tuesday last at Brooklands was a triumph for the two companies, although the honours of the contest naturally go to the Vauxhall Co., and it is more than pleasing to recall the fact that, in design, material, and construction, the two cars are British to the core. We seem to have seen these two concerns passing through all their stages from infancy to maturity, for, with Mr. F. R. Goodwin, we rode on one of the earliest of the motorcar productions of the Star factory, going, later, with him to Oxford on one of those early November runs commemorating emancipation day; whilst, if our memory serves us rightly, it was on a Star car that we first handled a steering wheel, earlier driving experiences having been with tillers and even handles of the Benz order. We remember, too, being invited by Mr. Hodges to go over to the original Vauxhall works to see the little 5 h.p. car that had been produced there, and of taking a run on it through the suburbs of London, and of being very favourably impressed not only with the design but with the quality of the work. From those early days neither company has looked back, and every move has been an upward move, every advance one that added to the reputation and improved the status of the concern. For enterprise in the development of a highly-efficient engine the Vauxhall Co. has an unequalled record, and as it has become patent that the directors and designers of that company have acquired unusual and very valuable knowledge of recent years, so it is evident in the case of the Star Co. that those responsible for its destinies have learned something during the past 12 months, as witness the doings of the Star cars in the Scottish Trial. And if we seek to inquire why this is, may we not assume that it is because the heads of the concerns (Mr. Kidner, Mr. Walton and Mr. Hodges, in the case of the Vauxhall Co., and Mr. Edward Lisle and his sons, Joseph and Richard, in the case of the Star Co.) are the practical mechanical chiefs, as well as the commercial chiefs, of those concerns? The match arose out of a remark in *The Motor*, in which we said that the Star had "spoiled" one of the handicaps at the Brooklands October meeting. Like some of "Punch's" nice things, this might have been expressed differently, for it was a sincere compliment in disguise. A dark horse may spoil a handicap, but it is very creditable to the dark horse to do so. And, in the match, the two cars showed up wonderfully well, and we say, without hesitation, that both the Vauxhall Co. and the Star Co. are to be highly commended upon the excellence of the performances of their cars and upon the sportsmanlike spirit shown on the day of the match.

EDITORIAL.—Contd.

Progress of Aviation in 1909.

THE article in this issue of THE MOTOR brings forcibly to mind the extent of the great advance in aviation that has been made in the past twelve months. The rapidity of that advance, in comparison with the generation of seemingly unavailing research that had preceded the success of the Wrights, is almost bewildering, but one may liken the Wrights' work to the opening of the long-closed and long-concealed door. That accomplished, the realm of aviation has been easy to explore. During the year Mr. Wilbur Wright's record distance has almost been doubled by Farman, and heights have been attained that, a year ago, would have been regarded as dangerous to attempt. During the year a great accession has been made to the number of men engaged in flying experiments, and it is safe to say that, to-day, over a hundred men exist who have flown at least some little distance, for between 50 and 60 have flown over five miles apiece in France alone. As another indication of the steady advance in aviation, it is to be noted that the aviators are no longer confining their flights to aerodromes. They have attained enough confidence in themselves and their machines to enable them to make cross-country flights and to cease flying round a field, and they are learning that there is need for considerable study if they hope to be successful in these new ventures, for the topography of the land must be learned accurately, and, not only must routes be carefully studied, but must be studied as from a height. It has been proved more than once this year that a man learns to become an aviator as he learns to swim, to cycle or to skate, and that, having once gained the knack, he is able to take charge of almost any machine and to acquit himself creditably after the first few minutes. Paulhan changed from a Voisin to a Farman and made a successful initial flight in the latter, and, later on, he took his seat in a Blériot and piloted it successfully at the very first attempt. The former success one can understand, because the change was from one biplane to another, but the change to the monoplane must have been rather great, and the outcome of the experiment is, therefore, very instructive. The growth of the aviation schools in France is very important. At the Chalons Camp, near Mourmelon, at Pau, at Juvisy, and at Bordeaux schools have been established, where the purchasers of machines are taught by pilots, who accompany the pupils until proficiency is attained, a system that the Wrights started and that has been followed by other constructing concerns. In many cases tuition is included in the price of the machine. If progress continues to be made during the next twelve months at as great a rate as our article shows it to have been in the past year, the flying age will commence to loom rapidly into view.

A Danger and a Warning.

THE escape of the Hon. Lionel and Mrs. Walrond on Tuesday evening from a serious mishap, due to the icy state of the roads, was fortunate for them and instructive to other people. Mr. Walrond had been speaking at a political meeting and was returning to Bradfield by car, whilst a second car, containing some journalists, followed. The roads were in a very slippery state, the water upon them having frozen. Whilst descending a hill, Mr. Walrond's car got completely out of control and dashed into the bank, and the other car fared little better. It was found to be impossible to hold the cars on the road, and the occupants, who fortunately escaped injury, walked to a village, and reached their destination, after many hours' delay, by a horsed wagonette. With every promise of a winter rich in vagaries, motorists would do well to be prepared for contingencies that otherwise might leave them stranded miles from anywhere in bitterly cold weather. To start out in weather that is merely wet, and to find, late at night on the return journey, that the roads have become converted into ice, and that further progress in some isolated spot is impossible, is a circumstance not to be lightly dealt with. Although desirous of naming no names in these pages and of eschewing the

puff, it is rendering motorists a service to point out that such a device as the Parsons non-skid chain seems to be the only thing for such a contingency, although, at a pinch, a length of rope bound round the tyre and rim might serve to secure at least some progress. And a final word of warning should also be given against the danger of driving on a much-cambered road or on a falling gradient which is covered with ice. The risks are very great, for a car will slip and slide, and there is no telling where it will stop in the course of its mad career.

An interesting and valuable addition to aeronautical literature has been produced in "Vehicles of the Air," a volume of 550 pages from the pen of Victor Longheed, and published by Reilly and Britton, of Chicago. The numerous and well-printed half-tone illustrations make the book one that will readily appeal to the man interested in mechanical flight, but possessing no mechanical knowledge. The work, however, is more than a popular treatise. Both the history and theory of flight are dealt with in an adequate manner, all successful machines are described and illustrated, and much detail information is given of a nature likely to be valuable to the aeroplane builder. We have not had the book long enough to prepare a full review, but we shall return to the subject in a later issue.

The Aerial League of the British Empire is taking advantage of the approaching General Election to approach candidates with the view of ascertaining whether, in the event of election, the candidate is prepared to support a vote for supplies for furnishing the country with adequate means of aerial defence, in view of the actual position already secured by neighbouring Continental nations. A form has been prepared embodying the question, and pointing out that by the time the next manoeuvres are held Germany will have 65 airships. It will be interesting to know the result of this effort to obtain the views of future politicians on such an important subject.

EDITORIAL NOTICES.

"THE MOTOR" is published in London every Tuesday morning. All editorial communications and copy must be addressed to "The Editors," and, to ensure insertion, should reach the office, 7-15, Rosebery Avenue, London, E.C., by first post Saturday. Important items of late news are received up to first post Monday morning. Contributions, literary and artistic, are invited, and will be accorded careful consideration, on terms set out on the first page of the Sale and Exchange section at the end of the book, to which readers are referred for other notices.

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THE WAY OF THE AIR.

After a good deal of correspondence and fuss generally the Cannes aviation meeting, proposed for 3rd-10th April, 1910, has received the sanction of the French Aero Club. All detail difficulties—including the acquisition of additional ground for the aerodrome—have been duly overcome, and the local aviation committee, headed by M. Capron—who, I believe, is the Mayor of Cannes—has guaranteed £3,200 in prizes, part of which will be provided by the municipality and the rest by subscriptions. M. Capron's colleagues on the committee, among others, are MM. René Lacour, Perread, and Paul Jeancoïd.

No doubt another aviation week will be one of the attractions of the Nice season, and it is tolerably certain that the International Sporting Club of Monaco—which, as we all know, circles round the ever-enterprising editor of "Les Sports"—will not readily be left out; albeit a sea-flight of some sort seems to be the only course available.

That the Frankfort Aeronautical Exhibition would prove a financial failure was expected by many well-informed visitors; but nobody thought the deficit would amount, as it has done, to anything like 170,000 marks. Thus the guarantors, it seems, are to be called on to provide some 15 per cent. as a beginning.

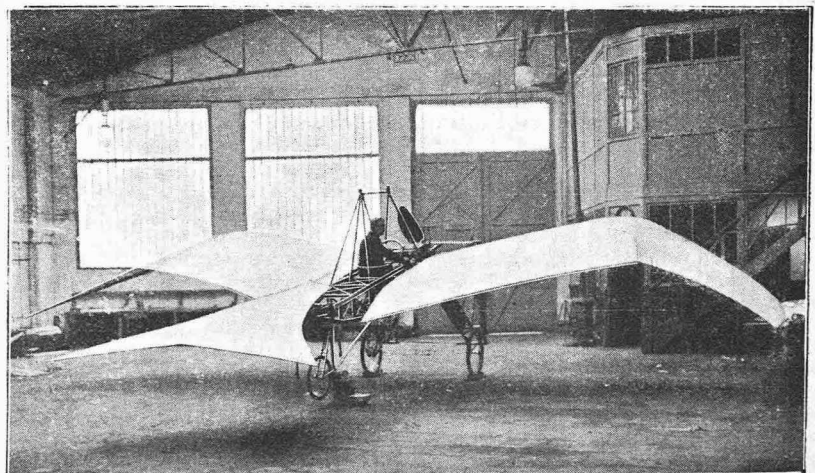
Writing of prizes, one may suggest that the sporting, and, with two magnificent exceptions, the daily, Press of this country has not been very loudly heard from. Nothing would be more graceful, or create a wider, better impression, than for some of our great newspapers in London, Glasgow, and elsewhere, to offer prizes for aviation in regard to some of the many kinds of flight-achievement that might be suggested. Knowing their past generosity towards practically every form of sport or pastime, one is certain that if they have waited so far it has only been to make sure how they might give most usefully, before announcing the gift. For that they regard aviation as a serious matter—one beyond the mere news-interest of the moment—is obvious from the valuable space they give week by week to aviation notes and other forms of publicity.

May I suggest then—since one great daily has already taken long-distance flight under its protection—that a shorter direct cross-country flight, say, of 10 or 20 miles straight, would be one suitable object: one, moreover, that would usefully lead up to the greater achievement? Another would be a speed flight, say, of five or ten miles straight; while yet a third—which, it seems to me, would be of distinct value from a military or scouting standpoint—would be the longest circular, or even out-and-home, flight, returning to the starting point. This last, of course, would call for an official observer. But have we not passenger-carrying aeroplanes? And surely the invention of a patent aerial log—somewhat like a ship's log in principle, perhaps—is not beyond the skill of those firms who have already devised the excellent speedometers which are now the essential features of every dashboard.

In Mr. Latham's cross-Channel attempt—in all but attainment I refuse to consider it other than a success—and the perceptible tendency to hull or boat-like body construction of certain of the more recent monoplanes, warrants the further suggestion of a prize for various flights over and across water. For instance, over the Thames or Medway estuaries—a flight from Westcliff Parade round the Chapman light and back would be no impossibility—Southampton Water, the Crouch, Blackwater, Humber, Mersey, Plymouth Sound, the Upper Clyde and Forth; some of the Scottish lochs or the beauteous tears on the face of Ireland: all within the compass of practical possibility to-day, with to-day's machines, to say nothing of to-morrow's. None of them represents the distance between London to Manchester—which project has been accepted by the cool judgment of one great journal—and all represent more favourable aerial conditions. Recollect this: the—Channel—has—been—crossed—on—an—aeroplane—easily.

Grasp that fact and its inwardness, and you will see that all this, and more, is no enthusiast's pipe-dream. If it were—admit it so, for the sake of contradiction—these are times when the chimera of to-day is the commonplace of to-morrow. These things, or their like, have got to be done, if aviation is to develop—as it eventually must—into an every-day reality, greater than the funambulations of the aerodrome. I ask nobody to look too far ahead, or rip events untimely from the womb of the future. Only prepare for them; at least take in the purview of the next mile ahead in the road of progress. Now, what has the Press of this country done for motoring? Made it what it is to-day, as you will admit if you examine the case with knowledge from the beginnings. There was an anti-motorist section once—some hounds run riot in any pack, yet the pack runs the true line, nevertheless—but that has all been forgotten in the great achievement fostered by the Press. Therefore I want to see the Press, all of it, unite to foster alike the latest child of progress, aviation. Here we have seen two great dailies, in London and Manchester, offering their gold and frankincense. Surely others have their gifts to offer. Here, again, we have "Touche a Tout"—a little French paper, the very name spells you its significance—offering £40 to the first Frenchman on a French machine covering the longest distance over a closed circuit before 4th April next. It is very little, you will say. So is a child's bunch of wild flowers: but the intention smells just as sweet.

AEROMOR.



Rear view of de Lesseps's monoplane.

MAGNETOS · POINT OF VIEW

Motor-house Heating.

SO many car owners appear to consider this subject with such trepidation that I thought a few words might be apropos. Some ask whether it is not a fact that any form of heating device burning fuel inside the motor-house is actually dangerous, inasmuch that petrol vapour may come in contact with it and ignite. Others do not fear this risk so much as the possibility that such heating devices give off "poisonous" fumes—by this, I presume, they mean carbon monoxide gas.

My opinion is that these fears are in the main baseless. Take the possibility of explosion: a necessary condition is a leakage of petrol, which could only arise from carelessness or a remotely-possible accident. Secondly, the vapour produced must come in direct contact with a flame, or else fuel in an incandescent state, and from what I have seen of these stoves the fuel does not reach anything like the igniting temperature necessary. Moreover, the fuel is so well enclosed that it would be extremely difficult for petrol vapour to come in contact with it.

As to the production of carbon monoxide, I can only say I have never heard of this being detected in the products of combustion. With a special fuel containing a certain amount of oxidizing material within itself there can be little, if any, doubt at all that complete combustion must take place, which precludes the possibility of carbon monoxide forming.

In considering this subject, it struck me that it would be quite practicable to use one of the numerous oil-heating stoves on the market for motor-house heating, if one were to take the precaution of placing it inside a fine wire gauze cage or screen: this, of course, to enclose it completely. This would allow the necessary air to reach the burner, and yet, on the principle of the Davy safety lamp, no flame on the inside of the gauze can possibly ignite a petrol-and-air mixture on the outside.

A Self-starting Peculiarity.

The experience which "J.C." relates in a recent issue, to my thinking, is of simple explanation. He says: "By switching on and slightly shaking the car the engine immediately and always starts." Obviously, this could hardly have any bearing on the condition of the charge in the cylinders—one cannot imagine that the slight movement of the engine would make the charge more readily ignitable than under normal conditions. One can only logically conclude that there is no spark actually passing at the plug before the car is slightly shaken.

"J.C." omits to state something which has an important bearing on the case. When he switches on, does the trembler of the coil buzz? If it does not, it is clear he has a bad contact on the low-tension side of the ignition circuit at some point, and the fact of shaking the car restores the contact. It might be a film of grease on the contact maker segment or brushes, or a loose connection in the switch. I have known this last example play strange pranks in starting and when on the road. The switch connections, moreover, are rarely suspected of being at fault, but it is a fact that the nuts often work loose with vibration. Of course, the contacts in the switch may have become defective from wear. I have come across several in a very rickety, worn-out condition, and it was quite a matter of chance whether a connection were made or not.

Frost and Water-jacketed Carburetters.

The possibility of a burst water jacket on the carburetter during frost should not be overlooked. If the circulation system is filled up with a glycerine mixture this will, of course, circulate through the carburetter as well as the engine, so that there is a minimum risk of the carburetter bursting, but what has to be kept in view is the fact that the water in the carburetter will freeze more quickly than that in the cylinder jackets if a non-freezing mixture has not been adopted in time.

Regarding non-freezing solutions or mixtures, I consider that alcohol and water, one-fifth of the former to four-fifths of latter by volume, is preferable to glycerine in all respects, save one—that is, that it is not permanent like the glycerine mixture. The spirit gradually evaporates, and unless some fresh spirit be added regularly, finally there would only be water remaining.

Show Suggestions for 1910.

Reading "Automan's" recent remarks about certain abuses at the Show reminds me that I can make an addition to his suggestions which the committee might think worth considering. The gallery is the part of the Show which requires some improvement as regards planning and management. By reason of the nature of the exhibits a much greater number of the class of visitor intent only on being amused and promenading is attracted than on the ground floor amongst the cars. This makes it extremely difficult, if not impossible, for anyone intent on really seeing the accessories during the evenings to do so. One has to reckon with the crowd which will gather wherever there is something frivolous or childish going on and block up the gallery till it becomes an impossibility to get along.

I had hoped that the management of the Show this year would have put some sort of check upon the persistent and irresponsible blowing of horns and other noise-making devices. At times, with half-a-dozen of such devices going at once, the gallery was simply a pandemonium. There is no doubt that a section of the public regard the Show simply as a kind of fair, and the greater the noise and crush the better they like it; they conclude that the blowing of horns and sirens, crackling of sparks and buzzing of coils, to say nothing of huge collapsing rubber figures, is solely and simply to tickle their fancy. Time after time did I hear expressions of disgust from people, who went with the real purpose of seeing the Show and in most instances of making purchases, regarding the manner in which access to important stands in the gallery was completely cut off by thoughtless, childish crowds.

Petrol Tank Explosion.

The editorial in last issue touching on a fatal explosion which occurred to two mechanics who were soldering a tank recalls vividly a narrow escape I had a few years ago, when soldering up a leak on quite a small cylindrical tank belonging to a motorcycle. Most fortunately for me, the filling cap was off when the mixture inside the tank exploded, and this relieved the pressure enough to prevent the tank actually bursting. The energy of the explosion spent itself in the form of a huge flame which blew out of the filling aperture. The fact that a few drops of spirit left inside would form a powerfully explosive charge I fully recognised before making the repair, and I took the precaution of inserting a rubber tube into the tank and blowing it to displace all the petrol vapour inside. Evidently I had not done it thoroughly enough. Ignition occurred by the tank inadvertently coming close to the bunsen burner, whilst I was examining the repair. *Verb. sup.*

STAR v. VAUXHALL.

An Interesting Contest which Originated in a Remark in a Report in "The Motor" of the last Brooklands Meeting.

THE day was very foggy when the little crowd turned out of the train at Weybridge and wended its way to Brooklands track on Tuesday last to witness the contest between the Star and Vauxhall cars, and fears were entertained of little being visible beyond a flash or two as the cars shot over the line, but in an hour the air had cleared to a material extent, and, except for the rawness in the atmosphere, there was little to complain of.

The history of the contest is interesting. The Star car, from the limit mark, ran away with the October Senior Handicap at Brooklands on 9th October, averaging 63½ miles an hour over the distance of 8½ miles. Our representative, because of this unexpected turn of speed, said that the Star had spoiled the handicap, which was one way of paying a compliment, but the Star Co. thought that it tended to nullify the advantage of the win, and they said that they were prepared to race any four-cylindered car with engine dimensions of 3½ in. by 5 in. on Brooklands.

Through the columns of THE MOTOR, this challenge was accepted by the Vauxhall Motors, Ltd., with the car that had won the O'Gorman trophy in August and whose engine dimensions were 90 mm. bore (3.529 in.) by 120 mm. stroke (4¾ in.).

A monetary stake was first suggested, but not proceeded with, the arrangement being that the loser should pay the expense of the track. The Star Co. accepted the challenge, although the Vauxhall engine was slightly the larger, and the date was fixed for 12th November. Two days previously the Star met with a mishap that involved getting new connecting rods, bearings, and pistons from Wolverhampton, and working continuously for 40 hours in order that the car might be in readiness. And on the next day (the day before the match) a defect showed in the Vauxhall engine (said to have been a crack in the cylinder), and the Vauxhall Co. had to return the car to Luton, asking for a postponement of the match.

The Star Co. were in the throes of their own mishap, and even doubtful them-

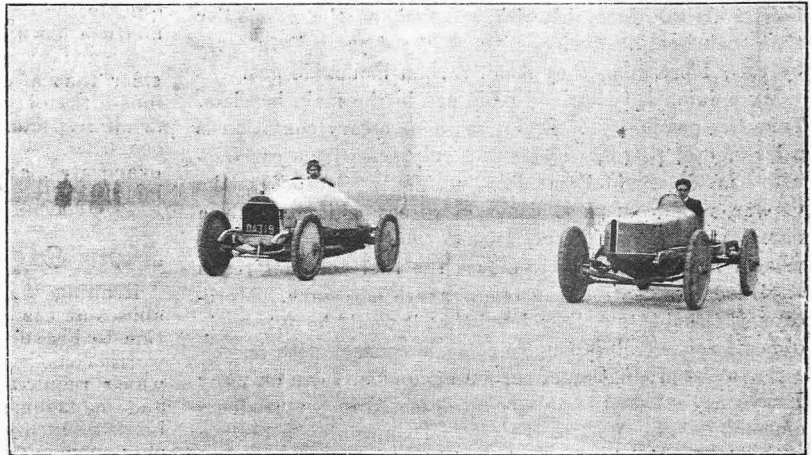
selves of keeping their engagement, but they were prepared to stand by the consequences, and when they did manage to come to the mark they were prepared to go through with the arrangement.

However, as neither side was satisfied about the "walk-over," they came to terms again, and the match was fixed for Tuesday last.

The Star car had, for the original match, had the spokes of its wheels encased with sheet metal, to form discs,

was deemed to be hot stuff. On both cars the front axle offered tapered edges at the front and rear to the air.

The preliminaries being arranged—that is to say, the distance being settled to be 5½ miles per race, with a start at the pond, so that they had to meet the upward gradient on the banking behind the enclosures, and, it being decided that the winner should be the one doing best out of three runs, and that both cars should be measured in respect of their



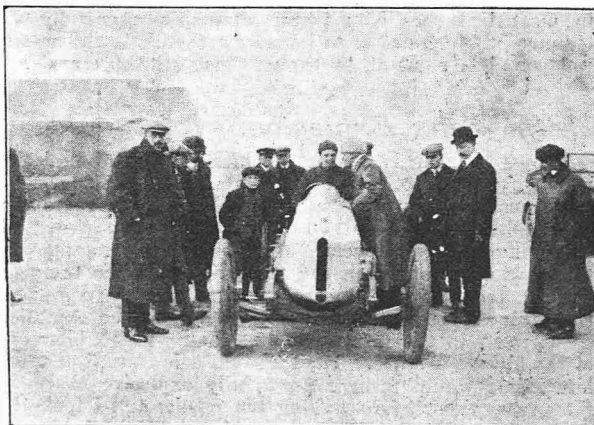
STAR v. VAUXHALL.

The competing cars drawn up together. The Star is on the outside and the Vauxhall on the inside.

and later was equipped with a body that offered a streamline form to the air, tapering off to a sharp point at the rear. The Vauxhall, also, was equipped with disc-encased wheels and a body that was kept bonnet width from radiator to behind the driver, whence it narrowed to a sharp vertical sternpost, and a metal "cut water," with an opening in the bow 16 in. by 2½ in., to admit air to the radiator, was added, so that the car presented a curiously-elongated appearance. It bore the cryptic letters KN on the prow, because, like the pepper, the car

cylinder dimensions afterwards, the two cars proceeded to the starting line.

Major Lindsay Lloyd held the watch, and gave the order to start; and, when the flag dropped, Mr. Hancock, who was driving the Vauxhall, made no attempt to start. We were at the moment watching Major Lloyd, in order to start his extra watch on the fall of the flag, so did not see the reason, but apparently Mr. Hancock was looking at his rival and had not noted the fall of the flag. Mr. Lisle looked round and then at Major Lloyd, and at the latter's



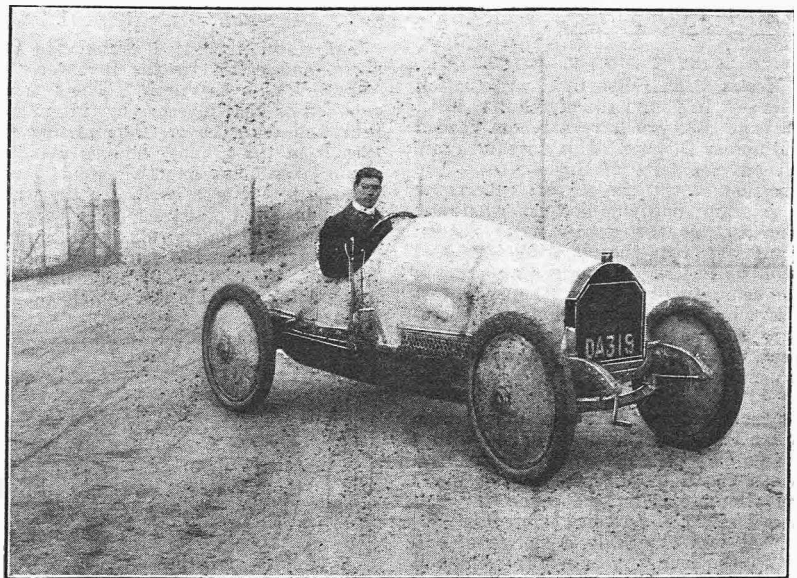
The prow and stern views of the Vauxhall car, which competed against the Star and won. It will be seen that, as nearly as possible in the circumstances, the body takes a streamline form, thus reducing the skin friction of the air on the surface

STAR v. VAUXHALL.—Contd.

signal returned to the line. The start then was an excellent one, Mr. Hancock going off the line first and leading for a few yards, when Mr. Lisle went past him, as had been expected, for the Star is a quick starter on the gradient, and took the lead round to the railway straight. Here the Vauxhall went ahead, and, gaining all the way, loomed up out of the fog and started on the second circuit some two or three hundred yards in front, and finished the prescribed distance in 4 min. 30½ sec., the Star being 17½ sec. behind, its running time being 4 min. 48½ sec. The respective speeds were: Vauxhall, 75.4 miles per hour, and the Star 70.8 m.p.h., average from standing start.

The second contest looked almost a foregone conclusion, but the Star held its own farther into the railway straight, but then had to submit to being pegged back. In the second lap, Mr. Lisle made an attempt to use his fourth gear, but concluded that it made the car slower, so reverted quickly to the third. In the end the Vauxhall won the round by 20½ sec., having improved its time to 4 min. 28½ sec., or 76.1 m.p.h., whilst the Star time was 4 min. 48½ sec. (only ½ sec. difference on its first round), or 70.78 m.p.h.

It is quite evident that both cars have



Mr. Richard Lisle on the 15 h.p. Star car that competed in the Star-Vauxhall match.

improved since the challenge was first issued, and it may be said of both that they have accomplished a marvellous per-

formance, one far in advance of anything that could reasonably have been expected from engines of such small dimensions.

News and Notes.

Olympia Show Dates.

Though not officially communicated, we understand that, subject to the general meeting of the Society approving of the scheme of a Cycle and Motorcycle Show, under the auspices of the Society of Motor Manufacturers, the exhibitions will be held on the following dates in 1910:—

Car Show, 4th to 12th November.

Cycle and Motorcycle Show, 18th to 26th November.

The Society has called a meeting for Thursday next to consider the question of an alliance with the cycle trade in the matter of future shows.

Speed Limit Inquiries.

Applications for 10-mile limits have been made by the Middlesex County Council in respect of lengths of road in the urban districts of Acton, Uxbridge and Staines. The stretches of roads referred to in the applications are as follows:—

In Acton: Part of the High Street.

In Uxbridge: Uxbridge Road (including High Street and Hillingdon Road), Cowley Road, Windsor Road (including New Windsor Street).

In Staines: Part of Clarence Street, High Street, part of London Road, part of Kingston Road, Gresham Road, part of Laleham Road, Thames Street, part of Church Street.

Objections may be lodged with the Local Government Board on or before 4th January, and a copy of any objection should be sent to the Middlesex County Council, Guildhall, Westminster, S.W.

At the latter end of March next Canada will open its fourth National Automobile and Marine Exhibition. This will be held at Montreal. Firms on this side should note that exhibits will be admitted duty free. The manager is R. M. Saffray, whose address is St. Lawrence Hall, Montreal, Canada.

Some Motor Pantomimes.

GEAR-BOXING DAY is the proper time
For producing a motor pantomime
All about Blériot's Wonderful
Lamp,

Marked with the genuine Geni stamp.
You wish to be carried across the sea
From England to France in forty-three
Minutes. You rub the lamp, and lo!
In a Blériot aeroplane off you go.

Then there is Little Red Motor Hood
Dressed for motoring neat and good.
And the gentleman dressed in Polar furs
Isn't the wolf, but a friend of hers.
And they're going to drive till the set
of sun

With dear old Granny, who's eighty-one.
Red Motor Hood wouldn't go out alone,
But Granny's a qualified chaperone.

And what of the Forty Petrol Thieves?
(When fatally barbers wash hair, it
grieves).

Forty persons who petrol sold,
And charged high prices, ill-gotten gold,
Only to find that, after all,
The call of "duty" was not their call.
But all the King's motors and all the
King's men

Can't render ungotten that money again.

There's George and the big Welsh Budget
Stalk.

Killing the Lords with Giant Talk.

There's Cinderella, whose Slipper aspires
To a Parson's Non-skid for Pumpkin
tyres.

There's Alice in Titleland—Standard's
riz—

Who greets the White Knight with
"How do, Sir Fris!"

And the rest of the Petrol world can
display

"Everything but the title," as one
might say. F.C.

Latest Improvement in the Challenge Reinforced Tube.

Mr. W. Yarworth Jones, the managing director of the Reinforced Inner Tube Co., Ltd., recently explained an improvement just effected in the manufacture of their tubes, and also some particulars relative to the development of their works and the increase of output now available to meet the extraordinary demand which is being experienced.

Presumably there will not be a motorist who is unacquainted with the general idea or construction of this tube, so we will confine ourselves to an explanation of this detail improvement just effected, which, though very small in itself, is an important factor in the completed article. With the object of giving still greater strength and elasticity to the all-rubber or rim-side portion of the tube, an overlapping piece of elastic, with Egyptian cotton webbing, is introduced and vulcanized to the canvas insertion in the tube, so that while the resiliency is in no way interfered with, a considerable amount of extra strength and elasticity are provided, as when the tube has stretched to its predetermined limit, the webbing in the elastic prevents it from being overstrained.

The public demand for this tube has, we are told, been very great during the latter part of this year, and the best indication for the future is a list of some of the firms who have placed large orders for it next year, such as Messrs. Harvey Frost, Brown Bros., Ltd., the See Band and Tyre Co., Thrupp and Maberley, and many others, including a large firm of Colonial shippers, and Messrs. Pirelli (of tyre fame), who have taken over the Italian patents. The output capacity of the new works is 2,500 tubes a week, and a very busy year is not unnaturally expected. These facts were set out at a dinner given by the directors of the company at the Oriental Club on Tuesday evening last.

NEWS AND NOTES.—Contd.

Wertheimer v. Edge.

Messrs. S. F. Edge, Ltd., write as follows:—"In your issue of the 21st inst., on page 812, you have a report headed 'Motorcar Dispute.' This does not quite set out the facts of this matter. The question of the three years' guarantee never came into this decision whatever. The fact as the matter came out in court was, that the plaintiffs suggested that we had used improper material in the connecting-rod bolts, whereas, a test taken by the National Physical Laboratory showed that the steel was 3 per cent. nickel steel, made by Jessops, with a yield point of 31 tons, a breaking strain of 40 tons, and also the figures arrived at for toughness were exceedingly high when tested by the Izod method with a single blow on a notched specimen. Also when tested by repeated impact blows on alternate sides, the connecting bolt stood 4,900 blows applied before it broke.

"It was then only a matter of evidence to prove very clearly that the bolt really was broken through carelessness in re-assembling the engine after a repair was made to it at Darmstadt, of which fact we had no knowledge at the time the action was brought. I think also that it should be set out quite clearly that before the action was brought, and after the action was brought, we made every possible effort to settle, as we appreciated Mr. Wertheimer was going into this action through his ignorance of motorcar matters, and it came out in the evidence that actually our last effort to settle was never even brought to his notice."

The R.A.C. Associated Clubs' Dinner.

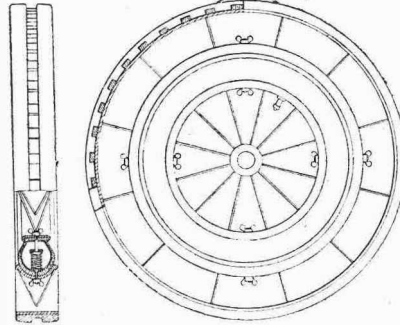
The annual dinner of the Royal Automobile and Associated Clubs, which is to take place at the Connaught Rooms, Great Queen Street, Kingsway, W.C., on Thursday, 3rd February, will mark the conclusion of the work accomplished by the associated bodies in the second year of their co-partnership. Since the last dinner the organization has grown in such a phenomenal manner that, great as the assembly was on that occasion, the number of those who will take part in this year's function is likely to be doubled. Such accommodation as is required for the coming dinner, being rarely needed for any gathering of a similar kind, is extremely difficult to secure, but sufficient space will be available to enable every member and associate who desires to take part to do so.

Several successful short-distance flights were made on the Isle of Sheppey last Tuesday by British aviators. The outstanding event of the day, however, was a fine 15-mile cross-country flight made by the Hon. C. S. Rolls. Rising from the aeroplane works near Leys-down, he first flew towards Shell Ness. Then after circling the aeroplane sheds there, he headed across country in the direction of Eastchurch, travelling at the rate of between 40 and 50 miles an hour. Eventually he was compelled to alight at Eastchurch, owing to the intense cold.

An official entry for the Michelin Cup has been made by M. Edouard Chateau, the chief of the Voisin aeronautical school at Mourmelon. M. Chateau, whose best flight up to the present is one of slightly more than an hour's duration, will naturally fly with a Voisin aeroplane.

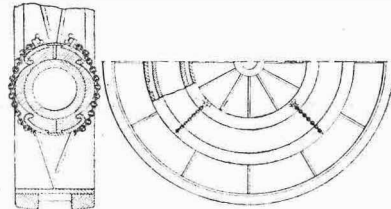
A Pneumatic Wheel.

The wheel illustrated is made in two parts, and called by the inventor "A Wheel Within a Wheel." The two are enclosed or held together by the inflated tube and outer cover, thus raising the tyre from the ground, and so avoiding risk of obstacles on the road doing damage to the tyre itself. In the wheel shown in No. 1 illustration the inventor has introduced four springs, working like pistons, which the inventor claims would, in the case of any accident to the inflated tube, enable the vehicle to pro-



No. 1.

ceed on the journey, besides giving it more rigidity. In case of a spring breaking, he has adapted the method of replacing one from the outside of the rim by simply unscrewing the cap, thus avoiding the necessity of interfering with the tyre itself when once in position. In No. 2 illustration a wheel is shown with the springs dispensed with, but to make it perfectly rigid chains have been introduced to be affixed from the centre of



No. 2.

rim on bottom to centre of rim on top. This is adapted to both front and back of the wheel, so that neither side will give way by any awkward or nasty turning point. In both model 1 and 2 the outer rim is of solid rubber, 1/2 in. in thickness, and of a ladder shape, which the inventor claims will prevent skidding of the car, as the intervals of the space will allow a proper suction effect, and further, by being able to reduce the width of the outer face of rim to a minimum size, he contends it will reduce the dust annoyance to a considerable extent, although a plain or any other shaped rubber rim could also be adopted. The inventor is Mr. W. Williams, 461, Oxford Street, Marble Arch, London, W.

A new preparation, the "Vindec" flux, for use in brazing cast iron, has just been put upon the market by Messrs. Brown Bros., Ltd., who tell us that their article is different from other preparations which are used for a similar purpose, and that it has proved most satisfactory in effecting permanent joints with very little trouble. It is used with ordinary spelter.

Paulhan Leaves France.

France has temporarily lost Louis Paulhan, her most skilled aviator, who left this week for a six-weeks tour in America. M. Paulhan, who was accompanied by Mmc. Paulhan and two mechanics, took with him three aeroplanes, a Farman, Voisin and Blériot. Unlike most French aviators, Louis Paulhan did not graduate through the motorcar industry. He was born 26 years ago, near the shores of the Mediterranean, and at the age of 16 entered as an apprentice on a steamship trading between France and Japan. After two years at sea he voluntarily offered himself for military service, thus obtaining a choice of service, and passing into the Aeronautical Corps. In six months his mechanical knowledge had enabled him to rise to the rank of non-commissioned officer. Later he was transferred to the Chalais-Meudon aeronautical establishment near Paris, where he was under the orders of Col. Renard and assisted Capt. Ferber in his aeroplane experiments.

On finishing his period in the Army, Paulhan entered the Surcouf, now Astra, aeronautical factory, where he was appointed by Henry Kapferer as mechanic on board the airship "Ville de Paris." He took part in all the trips of this airship during 1907 and 1908, and, in addition, assisted M. Kapferer in the construction of the Astra airship. Paulhan had made more than a superficial study of aeronautics, as was shown by several very successful model aeroplanes, some of which had a good sale in France, and the success of which induced him to open a shop for the sale of these models. In 1905 he won the Aero Club prize, and in 1907 and 1908 the Aeronautique Club prizes for the best models.

It was not until last July that Paulhan made his first flight, the machine used being a standard biplane. The flights were made at Bar-sur-Aube, from which point he removed to Issy-les-Moulineaux, where he rapidly completed his education.

R.A.C. Certified Trials.

A 4,000 miles trial of a set of solid Torkington tyres started on Tuesday morning last from the R.A.C. Motor House at 18, Down Street, Piccadilly, W. The car will run over the Club's six standard routes during the progress of the trial, these routes including every description of road that a motor vehicle might reasonably be expected to traverse during a tour. The tyres will therefore be tested under ordinary touring conditions. They are entered by Messrs. Torkington Tyres, Ltd., 4, Percy Street, Tottenham Court Road, London, W. The car to which the tyres are fitted is a six-cylinder San Giorgio of 38.4 h.p. (R.A.C. rating).

There appears to be every likelihood of a number of entries being received for a London to Edinburgh non-stop run by some of the cars going north for the Scottish Motor Trade Association Exhibition, Waverley Market, Edinburgh. The exhibition is to take place from the 28th January to the 5th February. This official test of cars intended for the Edinburgh Exhibition has now come to be regarded as an annual event.

The test of a set of Shrapnel splash-guards, entered by the Shrapnel Splash-Guard Co., Ltd., of 266a, South Lambeth Road, S.E., has been carried out by the Club, and the certificate is in course of preparation.

"Motor Cycling." Mondays.

CYCLOMOTS CAUSERIE

Scope for Improvement in Small Matters. by no means uncommon, but, until the

other day, I had never heard of anyone breaking his leg in the operation. The victim in this case is a friend of a member of the staff of Temple Press, and is a motorist of many years' experience, having owned a number of cars and having progressed from the small one-cylindrical type to a fine six-cylindrical English-made car. He was attempting to start the engine of the latter and had not properly engaged the starting handle, the jaws obviously having only just caught. He posed himself and gave a pull, the starting handle slipped out of engagement and he fell awkwardly, breaking the bone above the ankle. He is to be sympathized with, because the engagement of starting handles is a matter that is all too frequently glossed over by the manufacturers.

Cars of all makes, types and sizes pass through my hands in the course of a year, and it may scarcely be believed, but it is a fact that difficulty crops up more frequently over the simple operation of starting than over the control of the engine, the idiosyncracies of gear changing and the peculiarities of the steering all combined. In nine cases out of ten, the spring for holding the starting handle quiet is so stiff that one has to bring a deal of force to bear to overcome it, and to get the jaws to engage, and it is a thousand to one that the handle will jump out once or twice before one strikes the right degree of pressure required to keep it engaged. These stiff springs irritate me beyond measure, for, on my own car, the spring could be compressed with a light pressure from a finger of the left hand, whilst the right hand engaged the starting jaws, and yet I have never had a semblance of a rattle from the handle when out of engagement. Anyone afflicted with a stiff spring like this should take a cold chisel and hammer and snip off a convolution, or replace the spring by a weaker one, whilst an indicating mark on the handle, to act as a warning if the jaws be not completely engaged is, in some cases, advisable.

Throughout a chassis, there are dozens of details that increase the amount of labour required for their operation. Parts that are inaccessible are getting fewer, but parts that fit so tightly as to call for an excessive expenditure of force in their removal are as numerous as ever they were, and, whenever springs are used, they are seldom lacking in their strength. There is one make of car that I like very much, and I have often thought that my next purchase would be in that direction. But, each time I have been on one of the make, the stiffness of the clutch spring has destroyed the desire. I am sure that, although I reduce clutch manipulation to a minimum, a day's driving with one of these clutch springs would tire me out. The take-off spring of the foot brakes is of just the same character. Perhaps I have been used to light clutch and brake springs, but I must say that few come up to the ideal that I not only aim for, but see that I obtain with a car for my own driving.

The springs of bonnet catches afford another example of inadequate consideration. Consider how often a bonnet is unfastened and refastened, and the amount of unnecessary

tussling with awkward catches and struggling with needlessly strong springs that is involved can then be better imagined than specified. The car that is perfect in each and every one of these little details is hard to find, and I always think that the real reason for this is that the important officials of a manufacturing concern seldom or never get practical experience themselves. Instead of driving, they are, too often, driven, and they do not feel called upon to look after a car themselves, and thereby learn for themselves of the existence of these little difficulties that vex the soul and tire the hands of the amateur driver.

Grease in Radiators and Overheating.

An inquiry in last week's issue of THE MOTOR recalled an experience of mine in the summer. The inquirer wanted to know how to clean the inside of his radiator, which had become greasy, and he also said that on hills and in traffic the water will boil, whilst it is in normal running usually close on boiling point. I think that our correspondent has quite a nice little job in hand, and one that he will need to set to work upon thoroughly. There are only two sources whence grease can get into the cooling water. The grease may get past the stuffing gland of the water-circulating pump, but this is only likely if the stuffing is considerably worn and if the water, as it passes through the pump, is much hotter than should be the case. The only other probable source is leakage round the plug that closes the core hole between the cylinder and the water jacket. These plugs should be of iron, and the joints be ground in: as a matter of fact, they are, in the majority of cases of phosphor-bronze, and as the rate of expansion of the two metals is unequal, if a cylinder should get overheated, the joint will become defective and so remain. Just what would have happened is, of course, rather obscure, but, possibly, the hole will have been slightly expanded by the overheated plug.

With slackness between the plug and the hole, lubricating oil will be blown through into the water, whilst, in a lesser degree, there will be a tendency for water to pass into the cylinder, as the latter cools down after use. Then, grease being in the water, some of it will get carried through and will choke the strainer usually interposed between the radiator and the pump, and as the strainer becomes clogged the circulation will be affected and the water tend to boil. Our correspondent, therefore, should first ascertain if the plug joint is sound, and the only indication of this may prove to be the presence of oil on the thread of the plug when unscrewed. The plug should be replaced after the seating has been coated with a mixture of white and red lead.

Then the radiator should be removed (for the grease remains on top of the water and cannot be drawn off) and, after being washed out with copious supplies of water, should be swilled out with petrol. I have tried soda solutions, and have found them a nuisance, for the alkali affects all-brass parts, and it seems difficult to get rid of. The pipe leading to the pump should next be removed and its strainer cleaned. And this cleansing operation, again, is best done with petrol, any fluff on the strainer that cannot be got away being soaked in petrol and burnt off. The pipe from the pump to the water jackets should be removed, and, if found to be clean, will confirm the theory that the grease comes from the cylinder plug, whereas, if it is greasy inside, it supports the theory that the grease comes from the pump gland.

NEWS FROM PARIS.

Formation of a New Trade Association—Traffic Regulation Difficulties—Legion d'Honneur for Comte de Lambert.

(BY OUR PARIS CORRESPONDENT.)

Formation of a New Association.

NOT much attention was paid to the formation, last week, of the "Chambre Syndicale des Constructeurs d'Automobiles," or Automobile Manufacturers' Association, although the event is likely to have considerable bearing on the future of the French industry. In the past, two manufacturers' associations have existed, and have co-operated with the Automobile Club of France in the holding of the annual Salon. The leading constructors were members of the Chambre Syndicale de l'Automobile, a body which might be considered an auxiliary of the Automobile Club of France, for it had its offices in the same building. The Chambre Syndicale also comprised tyre manufacturers, body makers, accessory dealers, and manufacturers, who, together, largely outnumbered the motor manufacturers, while only representing a small proportion of the total capital invested in the motor industry. Frequently the big manufacturers had interests widely differing from those of the rest of the members of the Association. Thus, there was division on the question of a Salon during 1909, the big manufacturers being against it, and the small manufacturers and accessory men in favour of it.

In order that they shall not be outvoted in such matters as this, the leading manufacturers decided to abandon the Chambre Syndicale de l'Automobile, and form an independent body, to be known as the Chambre Syndicale des Constructeurs d'Automobiles. As its name implies, it is only open to motor-car manufacturers. Indeed, one of the articles of the new body is that it shall be open to manufacturers who construct,

in their own shops, the motor and transmission parts and assemble them in chassis form. When the time comes for organizing the next show, the Automobile Club of France will have to deal with this body on quite different terms to those of the past, for it is obvious that, without this association, no show can be held. It is hardly likely that the manufacturers will oppose a show, but they will be able to dictate the conditions under which it shall be held, and can also claim a larger share of the profits than they have received in the past. The nature of the association can be gathered from the fact that the firms represented on the board of directors are Peugeot (chairman), Panhard-Levassor, Renault, Gregoire, Brasier, Delaunay-Belleville, Delahaye, and Turcat-Mery. M. Armand Peugeot has been elected president.

Traffic Regulation.

Complete satisfaction is not felt in Paris at the attempt to regulate vehicular traffic on American lines. As already reported, a number of mounted Municipal Guards were placed on duty in the Rue de la Paix, with orders to keep the traffic in well-defined lines, and not allow crossing except at intersections of streets. This was only the prelude to the American method. Ultimately, a refuge was fixed up down the entire length of the street, this refuge being formed of iron bars stuck into the ground and connected by a rope. It is a method which is in force in several American cities, especially in most of the public squares of New York.

But Times Square and the Plaza at New York are large open squares, with only moderate vehicular traffic, and on which it is easy to temporarily rope off

a section as a central island for the convenience of foot passengers. The same does not apply to the Rue de la Paix, the most fashionable shopping street of Paris, always well filled with motorcars, and particularly crowded from 2 to 6 p.m. Strong objection is made to the central ropes by both drivers and shopkeepers. The former maintain that, when motorcars are standing two deep by the side of the footpath, there is only just room for a third vehicle to pass, and that it is almost impossible for a car with a long wheelbase to get across from one side to the other at intersections.

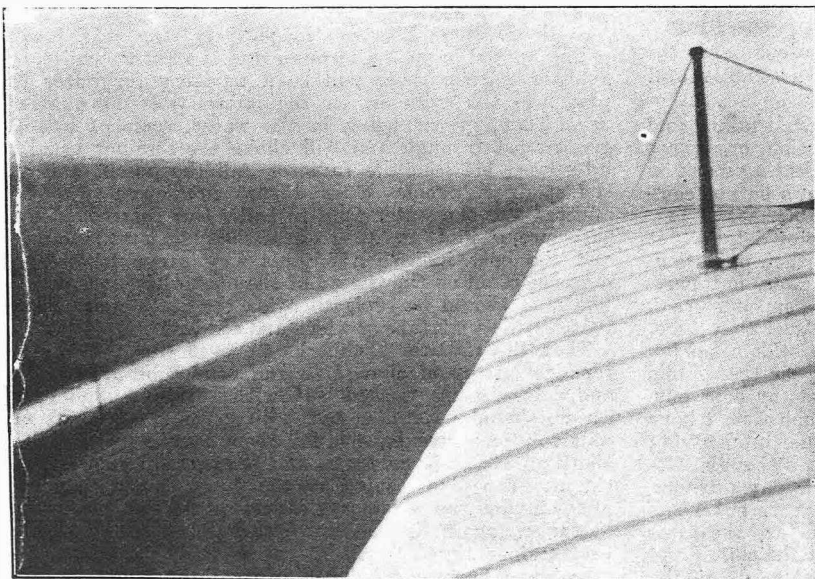
The shopkeepers claim that the mounted Municipal Guards regulated the traffic perfectly, while occupying practically no room themselves. They ask that they should be reinstated in this service; but to this the Chief of Police objects, and declares that he will either have the ropes or a central stone refuge. It will be interesting to see who will triumph. In the meantime, the public and motorcar owners, having been shown that traffic can be regulated by the strict application of a few simple rules, are more inclined to ask for further reforms than to allow the authorities to slip back into their old method of indifference.

Legion d'Honneur for Comte de Lambert.

At the banquet given by the Aero Club of France a few weeks ago, in honour of Comte de Lambert, M. Barthou, Minister of Justice, made an announcement that the decoration of the Legion d'Honneur would shortly be conferred on the hero of the Eiffel Tower flight. This week the President of the Republic signed the decree, and Comte Charles de Lambert is now entitled to wear the cross of Chevalier of the Legion d'Honneur. Since his cross-Paris flight, Comte de Lambert has been constantly employed in teaching pupils and testing Wright aeroplanes at the Juvisy ground.

Comte de Lesseps Fails.

The first attempt of Comte Jacques de Lesseps to win the prize offered for a flight of 100 kilometres across country has ended in failure. The start was made on a cross-Channel type of Bleriot machine from a high plateau immediately overlooking the town of Etampes. The objective point was Orleans. The starting point was not ideal, for immediately on the left hand of the aviator was a deep valley, in which lies the elongated town of Etampes, and through which run the high road and the railway to Orleans. This valley had to be crossed immediately, in order to reach the plain beyond. This had just been done, and the aeroplane was rising to clear the opposite hillside, when the motor began to weaken. As the aeroplane came down it struck a low fence, smashing all the running gear and the fore portion, but only superficially injuring the pilot. The engine failure is attributed to the poor quality of petrol employed. M. de Lesseps has a record of 1 hr. 30 min. in the air, the flight being made at Issy-les-Moulineaux.

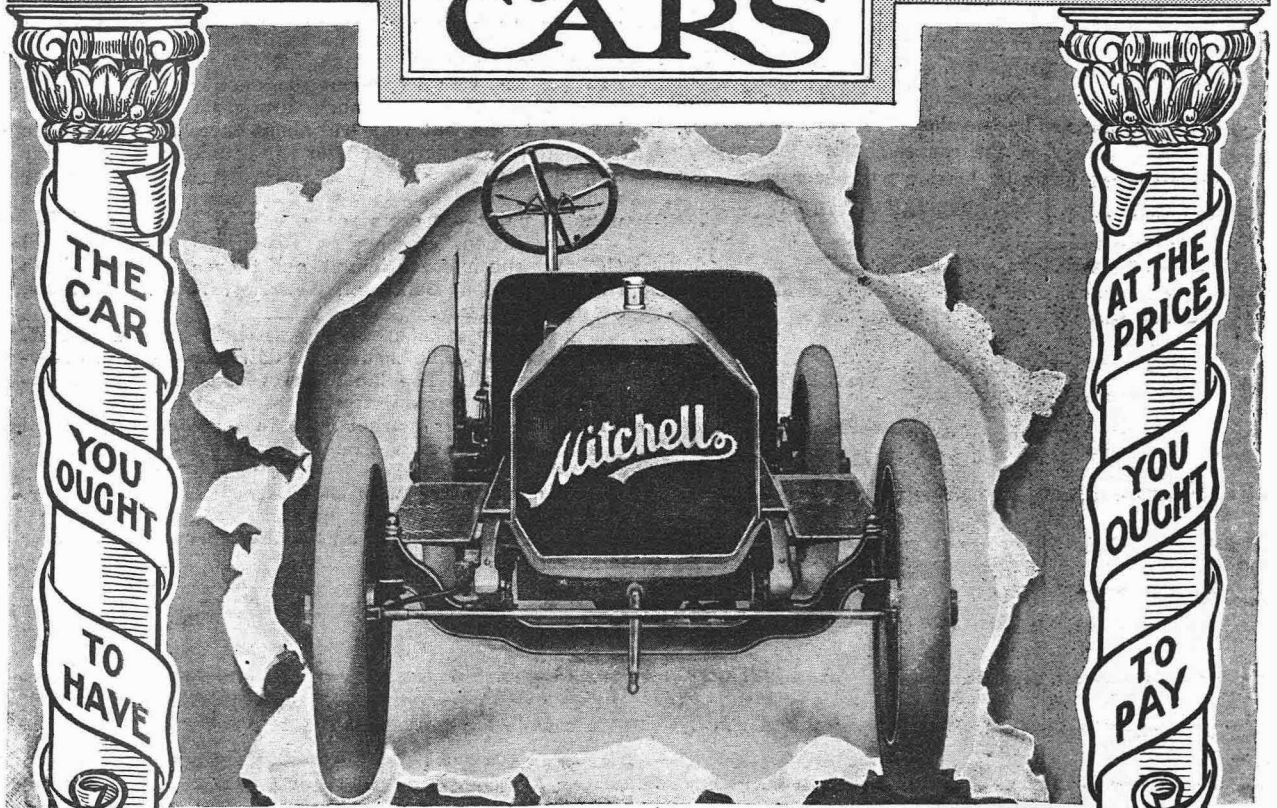


A VIEW FROM AN AEROPLANE.

First photograph ever taken from an aeroplane. This was taken from M. Latham's Antoinette. The aeroplane has just passed over the road between Marmelon and Chalons.

Bulletin No. 10.

MITCHELL CARS



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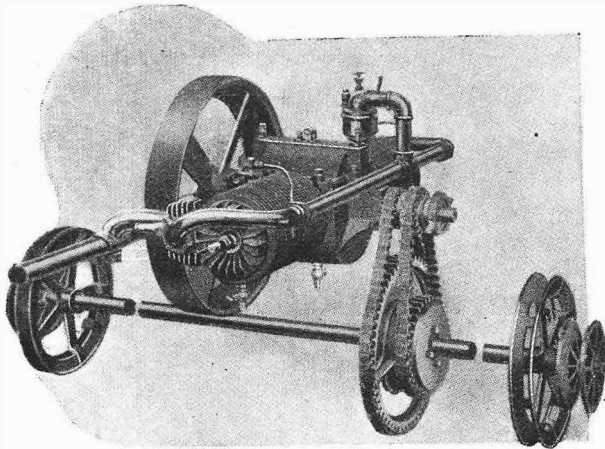
Three Thousand Miles on a Motor Buggy in Australia.

(By an Australian Correspondent.)

I HAVE read with interest Mr. Sturney's several articles on the Duryea motor buggy in your valuable paper, and, having had considerable experience with the Holsman, thought an account might be interesting.

Without doubt, this motor is the simplest form of machine made, the power being transmitted direct from the engine by two belts made of light chains wrapped round with webbing.

There are no gears or gearbox, no differential, no pump, tank, radiator or clutch. Two speeds are provided, and a reverse. The former consists of two sprockets on the engine shaft connected by two silent chains to two sprockets (of different sizes) on the countershaft, the method of changing speed being by locking whichever speed is required with a dog wheel running between the sprockets.



Motor and simple power plant on the Holsman buggy.

The engine is 12 h.p., twin-cylinder opposed, and runs as silently as an electric motor. There is also no vibration when the machine is in motion. It is air-cooled, the flywheel acting also as a fan, having spokes at an angle to throw the air into the cylinders.

The machine is fitted with double ignition, dry cells, and accumulator through two coils to two plugs in each cylinder, and very often magneto as well (giving three ignitions), the naphtha tank being situated in the back of the seat, and carrying four gallons, or sufficient for 120 miles.

The reverse is a direct drive by two V-shaped pulleys direct from the countershaft on to the iron flange of the back wheels.

I left Sydney with my wife and all our luggage on the machine illustrated, and passed through Newcastle, Singleton, and Scone right up to Tenterfield.

On this road, the steepest grades in the colony are met with, Grasstree, Waldron's Range, the Moonbie's and Ben Lomond mountain ranges, etc., etc., over which any motor's hill-climbing powers would be tested to the utmost, the buggy standing literally on end in many cases, and its air-cooling powers tested to the full, as many of the climbs are two and three miles long. To make the climbs still heavier, we had wet weather. The run of 69 miles between Armidale and Glen Innes, 34 of which are over Ben Lomond, was done on bottom speed in 18 in. of mud, and very often a foot of snow as well, the mud being so sticky that the spokes could not be seen, the wheels forming one solid circle of mud a foot thick. The machine pulled through this in great style, it being neces-

sary to stop, however, every now and then and poke the mud out between the mudguards and the rims, to allow the wheels to revolve. It took us six hours to make this run of 69 miles. On an average, however, we got 15 to 20 miles an hour out of our machine, and on good roads very often more.

It is worth mentioning that no motorcar could have crossed the range in this mud, and no one would face it with a horse unless absolutely necessary.

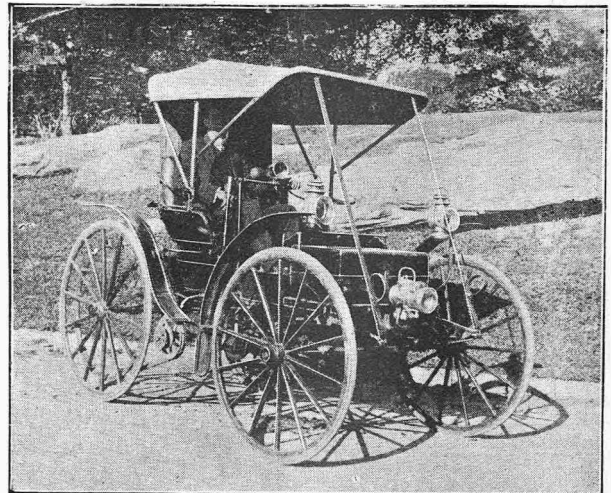
On some of our black soil plains in wet weather, the horses pull the front wheels off the trap, because the rear wheels are imbedded and held so fast by the mud. We had about 400 lb. of luggage, including an 80 lb. case of naphtha, and we weigh about 10 stones each.

The roads vary very much, are generally fairly good between towns, but very bad about three miles each side of the town; in fact, wherever the Municipal Council has control of the road it is bad. Mile pegs are placed every mile, and notice boards—as a rule unreadable, owing to want of paint—at cross roads.

We returned, crossing to Lismore from Tenterfield (108-mile run in seven hours), and thence down the rivers through Ballina, Bellingen, Kempsey, Taree, Gloucester, Stroud to Sydney.

The country is superb, the grass here being 2 to 3 ft. high, fortunes being made from dairying—in fact, everyone doing well. The land, however, is boomed, changing hands at the prohibitive prices of £40 to £50 an acre. Should the butter market drop in London, it will spell disaster to thousands who have bought land at these figures.

I am more in love with the Holsman buggy than ever. Just think of a trip with no tyre troubles, or, in fact, troubles of any sort. I am looking forward to another such holiday.



Holsman motor buggy, referred to in article.

A correspondent writes as follows:—"The respective merits of wood and wire wheels, detachable and otherwise, are at present coming in for a good deal of discussion, also the new Sankey all-steel artillery wheel, of which it is stated that the weight averages 5 lb. less than the wood wheel. It would be interesting to hear how it compares with the wire wheel in this respect. Each road wheel must act more or less as a flywheel, therefore the lightest wheel should give the best result in acceleration and braking, apart from the numerous advantages of lightness generally, and make for that great desideratum "liveliness" in a car.

SHOCK ABSORBERS.

Do they Decrease or Increase the Wear of Tyres?

IN a short editorial last week, wherein we announced, *inter alia*, that the next subject for our series of "Comparisons of Styles and Methods" would be shock absorbers, we suggested that (colloquially speaking) there was "more in it than meets the eye."

It is the object of this article to endeavour to give the reader a clearer and more concise knowledge of the functions of a shock absorber, and their relationship to the springs, than may be, perhaps, known to all ordinary motorists.

Of course the "novice motorist" (to coin a Gilbertian expression in an endeavour to avoid the ubiquitous "merest tyro") would at once say, if asked, that shock absorbers are provided to take up a portion of the greater road shocks, and having delivered himself of this sententious piece of information would be quite content, and go happily on his way innocently assuming that he had fully and completely answered the question. Well, of course, in a way he has answered it, and done so quite correctly, but there is room for very considerable amplification.

Perhaps before going further, it would be as well to come to an understanding as to what the functions of a shock absorber really are, and to define in some way a limit or bordering line between this useful little adjunct and the main springs of a car. Obviously the springs and the tyres are in themselves shock absorbers, though there is considerable variation in the degree in which they work as such. For instance, a laminated spring would probably act better than a coil spring doing similar work, owing to the action of the leaves, which have a creeping motion, each leaf being subject to a variable elongation as the axle rises; and if the length of the different leaves is correctly proportioned, the frictional resistance caused by this creeping of one leaf on another is a useful adjunct to the elasticity of the spring as a whole. This it is that accounts for the predominance of the laminated spring in locomotive and railway wagon practice. We see then that the main desideratum in a shock absorber is increased frictional resistance, either by the rubbing of one surface on another or by fluid pressure or other similar means.

When a wheel meets an obstruction to its smooth passage on the road surface, the axle is forced from its ordinary position, and the springs, becoming distorted, exert a pressure on the shackles, tending to raise or lower the suspended portion of the chassis, according as to whether the obstruction met is above the road surface or below, as instanced in a rut. This action is the cause of creating a series of vibrations, and it is the duty of the shock absorber to instantly start to check these, and so conduce to the comfort of the car occupants. A certain amount of discrimination must also be manifest in the action of a good shock absorber, and it is expected to leave, or practically leave alone the small irregularities of the road surface, which should expend themselves in the frictional resistance between the leaves of the spring, but at the same time to be on the alert for exceptional bumps, in the rebound of which its action must be immediate.

Not only must it have this damping effect on vibration, but it is intended to keep the wheels on the ground, and it was originally fitted to racing cars with this intention. Herein lies a point which is worthy of a little closer consideration, as it bears on the ever-present subject of tyre wear.

It is patent to all motorists that the driving wheels of their cars are frequently off the road surface altogether for a fraction of a second, just after encountering an obstruction, say, a large stone. Let us consider what happens during this very small, though ever recurring,

interval of road contact. For the sake of argument and simplification, take an imaginary car without springs, running at about 20 miles per hour, which encounters a small stone about 1 in. high. Of course, this example will give an exaggerated result, but the obstruction and speed taken being only moderate, it may be safely assumed that similar results will occur in ordinary practice, wherein larger obstacles are often met, and the speed is sometimes greater. Those anxious to check a little problem in mathematics, or rather kinematics, will find that on the assumption that we are using a 30 in. driving wheel in our example, the said wheel after striking the obstruction will remain in the air for the larger part of a second, and as 20 miles per hour is approximately 30 ft. per second, we find that a wheel may travel some few yards without actually coming into contact with the ground. Of course, as before stated, this is an exaggerated case, but it serves to draw attention to the fact.

This action has a direct bearing on tyre wear, and as will be pointed out shortly, shock absorbers also play a not unimportant part in this phase of a car's suspension. Now, then, in what way does this affect the tyres? If we continue our argument in the vein of assumptions, suppose the wheel to remain in the air for only one-half of a second, and the engine to be revolving at 1,200 r.p.m. This is well within the bounds of reasonable data, and yet it is quite obvious that during that half of a second in which the wheel is off the surface of the road, the engine will perform 10 partially wasted revolutions, as it is running at 1,200 revolutions a minute, which, divided by the 120 half-seconds contained in a minute, gives 10. Now what do these 10 revolutions do? They cannot directly drive the other wheel, assuming it to be on the ground, because of the differential gear, therefore those special 10 revolutions must work through the balance gear and thus accelerate the linear speed of the wheel in the air, so that the tyre comes into contact with the road again at a greater speed than that at which the car is travelling.

In our example, assuming a medium negative acceleration for the car, during the time the wheel is off the road surface, the linear speed of the tyre when it touches the ground again would be nearly 1 ft. per second in excess of the speed which it has to instantly assume as it once more takes up the drive. Now it does not need much consideration to see that this would be very detrimental to the tyres, and also somewhat damaging to the road surface. These figures are, as already explained, an exaggerated case, as the wheel of a car fitted with springs and pneumatic tyres would probably only be in the air, in similar circumstances, for about 1-12th of a second, but even in that time the engine would do very nearly two revolutions. Now, then, do shock absorbers affect this?

Well, probably everyone will say, "Oh, they tend to press the wheel down more quickly and thus save the wear of the tyre due to the skidding effect caused by checking the accelerated lineal velocity." Well, do they? That is the question.

At first sight it seems fairly obvious that they do, but if we follow out their action a little more closely, we may find doubts raised in our minds.

Now it is obvious that when surmounting an obstacle, the frictional resistance of the shock absorber whilst the wheel is rising must of necessity add to the upward reaction of the framework to which it is attached. Bearing this point clearly in mind, we now consider the action coming down from the obstacle, in which moment the wheel is, or should be, increasing its distance from the chassis towards the ground. In this case, the upward reaction on the framework and the downward pressure of the spring on the axle are lessened by the amount of frictional resistance contained in the shock absorber.

Thus it would appear that there is reason to think that, in this respect, it really stiffens the spring when it is under compression, and weakens it on the return

SHOCK ABSORBERS.—Contd.

movement, which seems to indicate that, as a matter of fact, the wheel of a car fitted with shock absorbers would probably stay in the air longer than the wheel of a similar car without them, as the returning action of the main spring (assisting gravity to restore the wheel to the road) is lessened by the amount of frictional resistance stored in the shock absorber. If this is so, we should be drawn towards the conclusion that they did not increase the life of a tyre, and begin to wonder whether or no they had a slight tendency in the opposite direction. This is a point well worthy of consideration, and whilst we should certainly hesitate to make the assertion that the facts are as suggested, nevertheless a careful perusal of the argument seems to point in the direction indicated. Of course, in any case it does not affect the main object for which a shock absorber is provided, viz., the checking or damping of excessive vertical movements and the absorption of trans-vibratory oscillations, but it is not infrequently claimed that they increase the life of the tyre, a point which, maybe, is open to discussion.

There is in some cases a tendency to make the damping effect produced equal both for the upward movement and also for the rebound. Now a little consideration will show that to do this must in reality have the effect of stiffening the main spring, whereas what is really wanted is chiefly to check the rebound. Opinions appear to be

divided on this point, so it does not do to be didactic about it; but at the same time it is fairly obvious that the springs, if correctly designed, should be allowed free play to perform their part of the shock absorption, and if you stiffen them materially you must tend to limit their action, beyond what was originally intended by the designer.

It would appear, then, that it is preferable to allow free, or nearly free, movement to the springs on the upward action, the actual checking to only take place on the rebound. As already stated, however, opinions differ very largely on this subject of shock absorbers.

In the series of "Comparisons of Styles and Methods," on another page, we illustrate some different types, and a considerable variation is seen. Though these by no means exhaust the list, we think it gives a fairly good insight into the different ways and means adopted to obtain a similar result. As will be seen, they vary from a small compressional spring or a torsional rubber band to either a hydraulic, air, or other fluid compressor, whilst a not inconsiderable number employ various types of friction plates. From a perusal of the above and a study of the illustrations on the "Comparisons" page the reader will readily form his own opinion, whilst it would undoubtedly be interesting to know the ideas of our readers on the point raised with reference to the effect on tyres when cars are fitted with shock absorbers—do they diminish the wear, or do they increase it?

NORMAN.

The Possibilities of a Small Workshop.

By W. M.

HERE is no reason why any motorist who desires it should not possess a small workshop, but so many say "I have no room; it takes a large space to fit up as a workshop." This is, to a great extent, a wrong idea, for it is really wonderful what a lot can be done in a very limited amount of room. To the ear it would hardly sound probable that 11 ft. 2 in. by 3 ft. 10 in. could contain a wood lathe, a 3½ in. centre Drummond metal turning lathe, a short bench with large vice, a small steam engine, and a portable grindstone. However, such is a fact, for I am the owner of the above extensive domain, and I have been astonished at the variety of work (by the exercise of a little ingenuity) that can be turned out from a shop of this size.

On the wood lathe a great deal can be executed that is of use in the way of repairing; for instance, nearly anything that is made of fibre and vulcanite is easily turned out by it, such as switch handles, commutators, magneto insulators, etc. Then it is very useful for brass work on not too extensive a scale, and if you have hand chasers, brass screws are worth the doing, as they are not particularly cheap to buy, and it is good practice if you are new to this sort of work. To save the expense and space of a drilling machine, it is best to utilize the wood lathe again, for generally one requires to drill oftenest when the Drummond is in use. A three or four-jaw chuck is required.

Cushmann's are as good as anyone can want. Brown Bros., of 15, Newman Street, Oxford Street, London, W., supply these at moderate prices, with lathe and drill jaws complete, and adapter can be made to enable it to fit the mandrels of both lathes. When using the lathe as a drill, the material is fed to the drill by the back

headstock. An emery wheel is another useful fitment, for though it is a nuisance sometimes to change the chucks, etc., so often on the one lathe, it is worth it when every square inch is valuable.

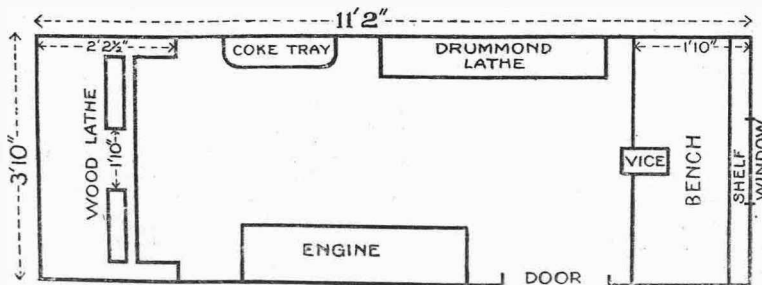
The power for working the lathes I get either by treadle or from the small steam engine, the dimensions of which are as follow:—Bore 3 in., stroke 3 in., rough overall dimensions 1 ft. 6 in. by 6½ in. As regards the boiler for the above, the little workshop goes on strike at having this within its walls, and so it has to be accommodated in the garden. Doubtless most of the readers of THE MOTOR will know of the many capabilities of 3½ in. centre Drummond, but lest there be a few who do not quite realize the size of work that can be managed to be turned out by it at a push, the suggestion below may be helpful.

By raising the headstock up with packing strips, or parallel blocks, practically any ordinary job to be found on a motor, except particularly heavy work, can be done in a 3½ in. lathe: for instance, 14 in. aluminium castings have been turned successfully. It is good to have several packing strips ready prepared in thicknesses, increasing by ¼ or ½ inch. For boring cylinders a traversing cutter bar is often of great use by taking off the slide rest, and bolting or strapping the job on to the lathe bed, say, for example, an aluminium gearbox, of which the housings of the bearings have become oval through bad alignment and weak chassis design.

The best method is to fix the cutter bar in the lathe, bolt the gearbox around the cutter bar, then fit any convenient packing under gearbox until housings are dead true with bar, when it can be fastened down with bolts and straps. Then there is a useful attachment that can be made to fit the slide rest for cutting keyways in shafts, by fixing a fairly long bearing in a tool holder, and driving from overhead gear with gut band, a flat-nosed drill which can be pushed up to the work and traversed in the usual way with a slide rest.

A simpler method is by drilling a hole at each end of the required keyway, and using a square-nosed or parting tool fixed sideways in the tool-holder, and traversing in the ordinary way from hole to hole.

The following idea for making new fibre wheels from old patterns may be



Plan of proposed workshop.

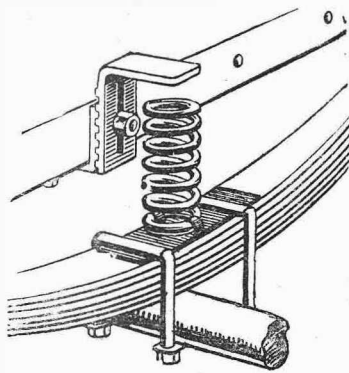
SMALL WORKSHOP.—Contd.

appreciated by owners of small lathes. Bolt a new piece of vulcanized fibre to the old wheel with screwed mandrel, and substitute a milling cutter in place of the flat-nosed drill used for keyways to cut the teeth; a stop must be fitted on the headstock to hold the old wheel in position while cutting each separate tooth.

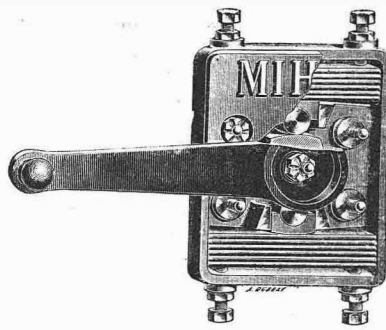
When the small outhouse was first converted into a workshop there was only a window over the place where the bench was put, so a skylight was made over each lathe. For night I have not yet been able to afford the luxury of electric light, as gas had been previously laid on, and it is not an expensive matter to have a little extra piping added and double-jointed brackets put over the lathes and bench. From the one bracket I have had a most useful fitting put, consisting of a double end to the gas jet—one for lighting and the other for attaching a flexible tubing, which can be fixed at will to a soldering stove or portable one for heating purposes.

The greatest difficulty I have experienced in the matter of space is the size, or length, of the bench, when a long piece of tubing, etc., has to be put into the vice. I have had to give in occasionally and put out work, though I have sometimes saved the situation by the position of the door, as on one occasion I was enabled to put a long piece of work at such an angle in the vice that part of it protruded out of the door. This may be a tip in the original arrangement of very minute workshops.

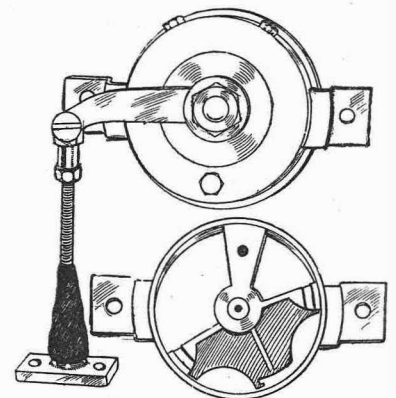
There is one more difficulty to be solved, namely, to find room for any sort of forge. At present I use a blow-lamp, the soldering stove and the kitchen fire. However, there should be the possibility of fixing up a coke tray on the wall, as marked in plan, and heating it up with blow-lamp. On the walls there is plenty of room for shelves to hold tools, pots, etc. When putting them up it is well to remember not to make them too wide—10 in. at the very most—or they will interfere with working at the lathes and bench. The hints given should prove that the equipping of a small workshop is not difficult.



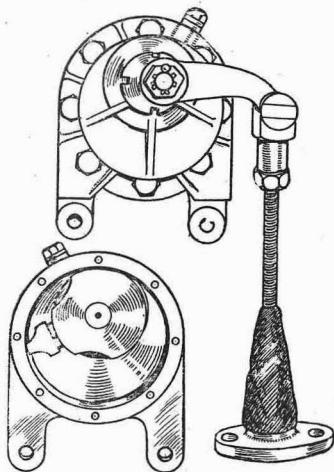
"Simply."



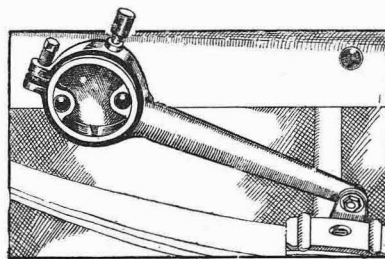
Mihi.



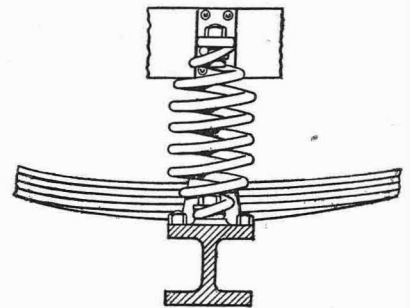
Glissoire (Warwick-Wright)



Warwick-Wright "Hydraulic."



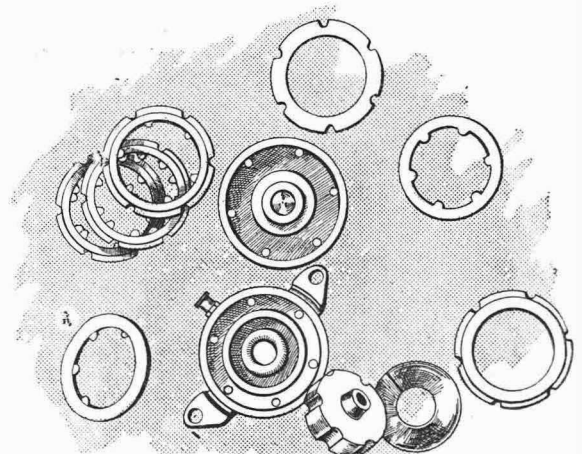
Napier.



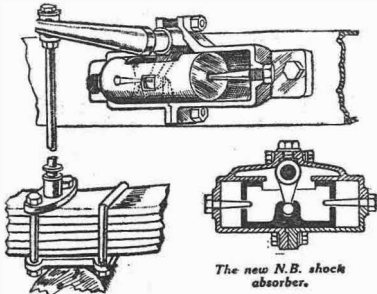
Sager.

**Comparisons of Styles and Methods:
No. 8. Shock Absorbers.**

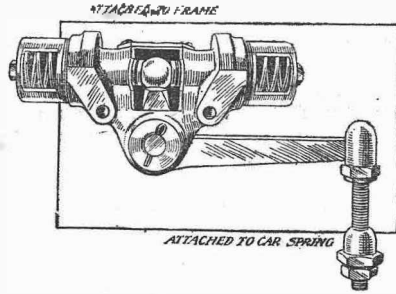
In the construction of the "Simply" there is nothing to belie the name, both the attachment and the adjustment being as simple as possible, whilst the Sager is equally lacking in complication. The Napier is a frictional device, as also is the Phoenix, which is fitted as standard to all six-cylinder Panhard cars. The Mihi has a number of adjustable spring plates, whilst the resistance in the Glissoire is thick oil glycerine being used in the Warwick-Wright hydraulic. The series is continued on the following page—848.



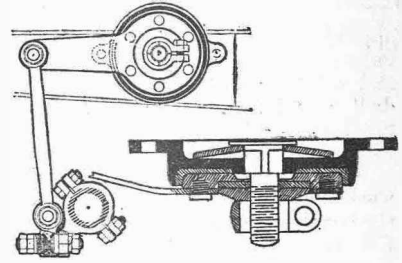
Phoenix-Panhard.



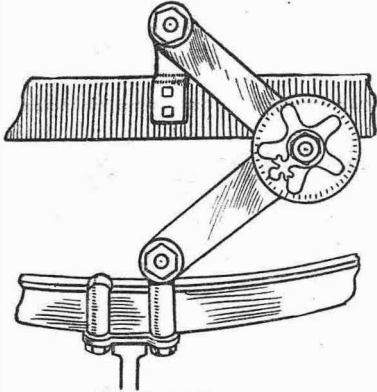
Newton and Bennett.



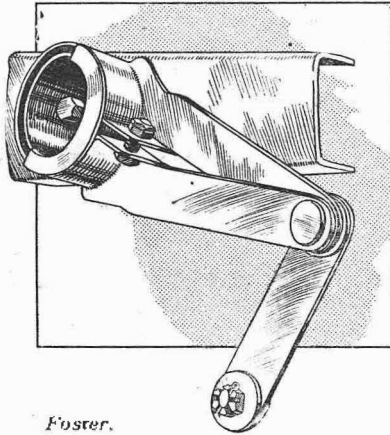
"Amans."



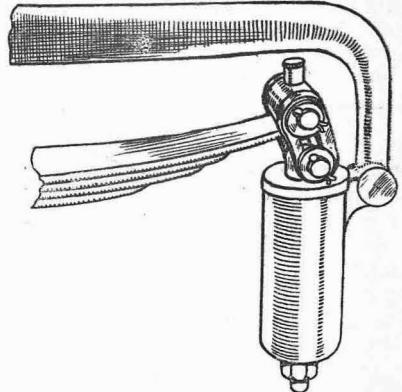
Truffault.



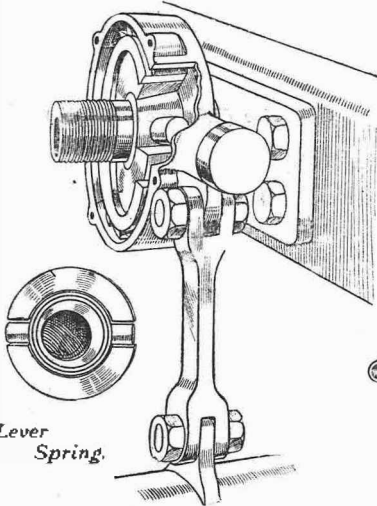
Truffault-Hartford.



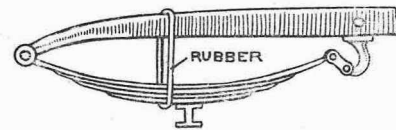
Foster.



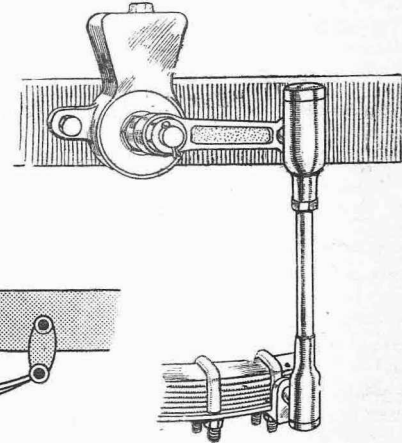
J.M.



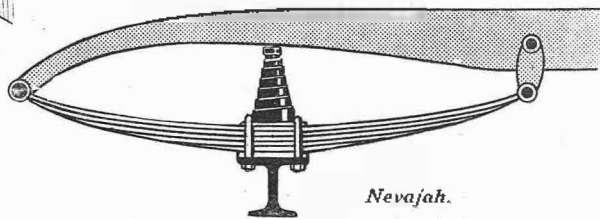
Lever Spring.



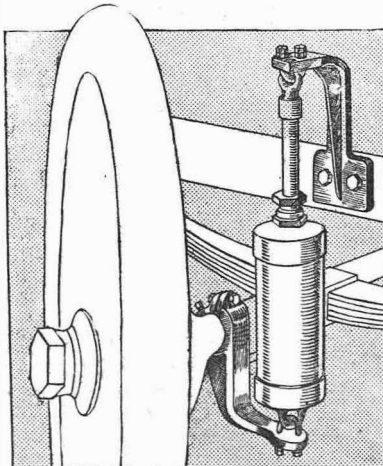
Mercedes racer.



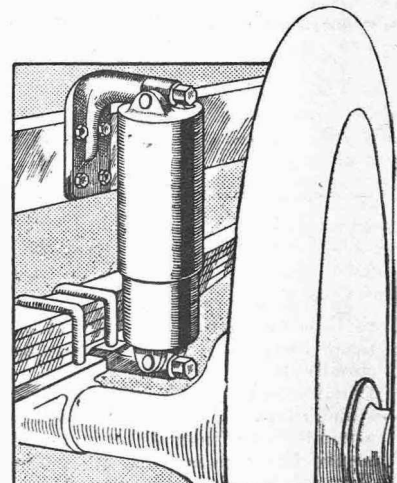
Houdaille.



Nevajah.



Fleutje.



Kilgore.

Comparisons of Styles and Methods.

No. 8. Shock Absorbers.

The actions of the Mercedes and the Nevajah are quite obvious, though it is interesting to note that the former is in tension. Examples of frictional devices are the Truffault, the Foster, the Lever Spring Co.'s, and the Truffault-Hartford. The J.M. is an enclosed coil spring, the Amans and the Kilgore compress air, whilst the Newton and Bennett, the Houdaille, and the Fleutje are hydraulic, using either oil or glycerine. A further selection will be found on the preceding page—847, though, of course, these do not constitute all that are made.

MY WAY OF THINKING

By HENRY STURMEY

The Decline of Low-tension Ignition.

A CORRESPONDENT last week inquired why low-tension ignition has declined in favour of high, as was plainly evident by observation of the cars shown at the recent Olympia Exhibition. I am afraid I cannot tell him, if he expects to have any superior advantages of the high-tension system pointed out. The low-tension magneto system of ignition has, indeed, a very great deal to recommend it. Personally, I have never had greater satisfaction than when using it, and I have used it in various forms for years. If its merits are fully considered, there is only one in it, and I can but conclude that the present increasing popularity of the high-tension magneto is due to that habit of following each other like a flock of sheep, which the motoring trade and public have. Makers, I know, who have abandoned the low-tension system in favour of the high, in response to demand, have done so with reluctance and against their predilections. To begin with, the low-tension magneto is a vastly simpler thing and a considerably cheaper thing than is the one which is displacing it, and all the troubles of short-circuiting and faulty plugs, stuck tremblers and shorted coils, which accompany the use of high-tension ignition, are eliminated. As at first made, the fitting of the make-and-break mechanism, where it passed into the cylinders, was open to improvement, and leakage of compression sometimes occurred, together with wear of the working parts, but if the striking device is embodied in the form of a plug, removable in the same way as a valve cap, and readily replaceable by another, this drawback no longer exists, and there is no reason why a man using low-tension ignition should be stranded any more than his neighbour who uses high. Indeed, very much less.

The principal reason, I think, why makers have not adopted it more, is to be found in the fact that they could adopt the high-tension magneto without any alteration in their engine design, and that the public were content to accept it without question, so that following the line of least resistance has led to the great popularity of the high-tension magneto to-day and to the decline of the—in my opinion better—low-tension devices.

Dazzling Headlights.

It is, I think, admitted that the acetylene headlight of the modern motorcar is a necessity, if the safety of the motorist is to be considered, and that it likewise tends to the safety of the public, but at the same time it has its drawbacks, for it undoubtedly does dazzle the oncomer whose vehicle is less brilliantly lighted than the one that carries it. From that point of view it is, in itself, a source of danger. But even admitting this, I think Messrs. French were ill-advised to bring their action, as they did recently, against Lord Curzon, although the result has gone far to establish the position of the brilliant headlight legally. The case, however, does bring out very prominently the dangerous side of the headlight, and serves to emphasize still more the need, which has been frequently pointed out in the motoring Press, for some efficient means of destroying the dazzling effect of the lamp without lessening its effective brilliancy. Had the verdict gone against Lord Curzon, there is no doubt that it would have led to a very large increase in the adoption of anti-dazzling devices, and in the interests of all using the roads, motorists included, it could be wished that these devices met with greater support than they do. I suppose it is to the fact that "the other fellow" is the one most

affected, and that the different devices are expensive, that the failure of the motoring public to adequately support their makers may be attributed, because I see very few indeed upon the road, and the makers of them appear to be advertising them less, a fact which would imply a failure of recognition of merit in the practical way of orders, as a firm soon gets tired of informing the public of the existence of a good thing, if that public persistently declines to accept the proposition.

A Danger Exemplified.

THE MOTOR, in common with other journals devoted to the movement, has never ceased to urge the necessity for the cutting down of obstructive trees and hedges at otherwise blind corners, and the recent fatality to the Hon. Archie Gordon is a striking example of the danger which lurks in such places. At the inquest which has just been held on the unfortunate motorist, there appears to have been little to find fault with in the driving of either car. Both drivers sounded the horn, though it does not appear to have been heard by the occupants of the other vehicle. Mr. Gordon himself was driving moderately fast, but apparently no faster than he would be justified in doing on a main road, and the car with which he collided seems to have entered upon the main road with due circumspection and at a sufficiently slow pace. Indeed, in this particular instance, had it been travelling faster, it would probably have just escaped the collision, so that no blame appears to attach to either driver, and the sad case may be put down wholly and solely to the credit—or discredit—of the masked corner.

No more striking instance of the need for the improvement which motorists advocate could be adduced than this, and if the Roads Bill ever comes into operative use, the rendering of such corners safe should, and doubtless will be, one of the first considerations of those entrusted with the administration.

The Coming Election.

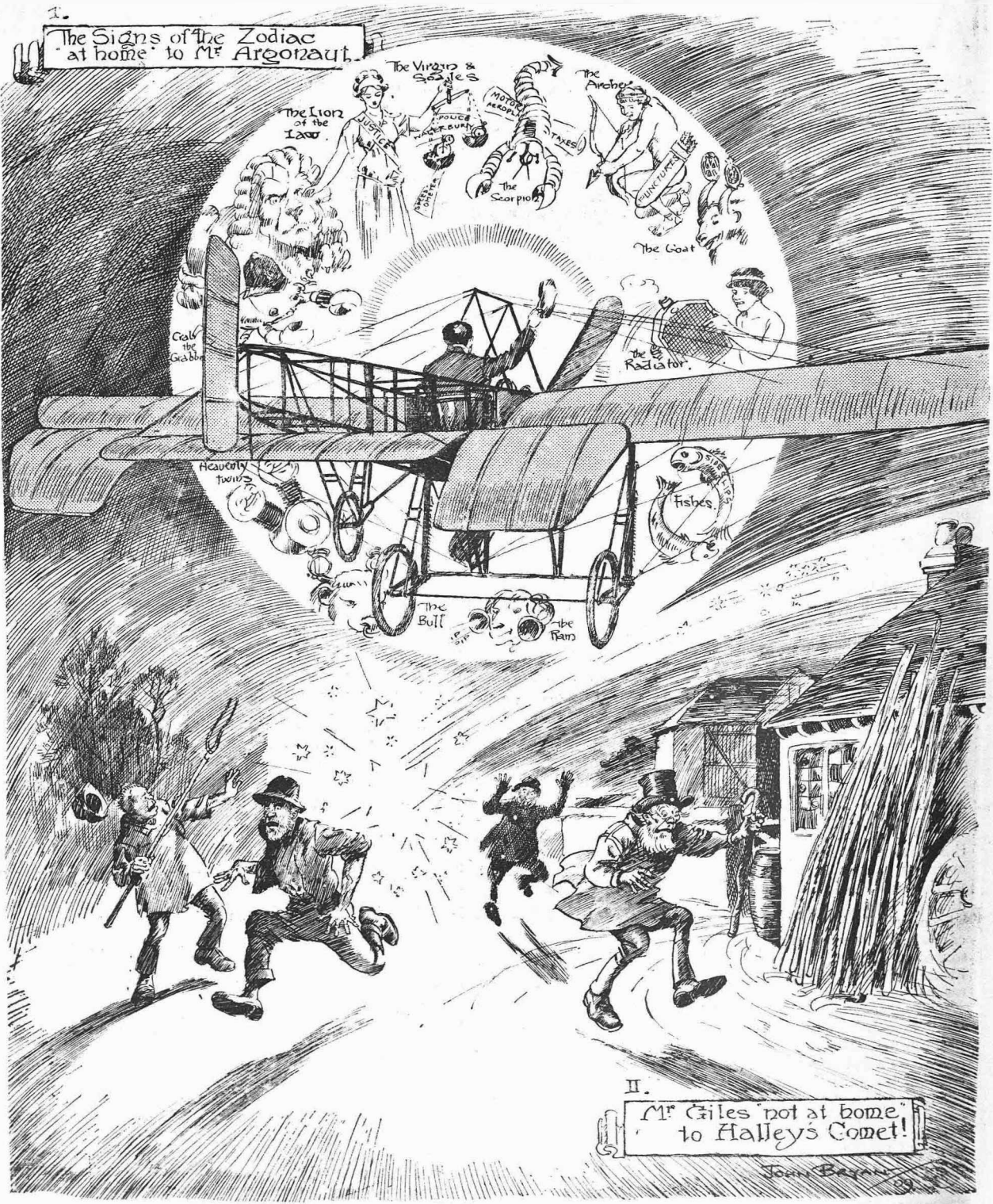
The Royal Automobile Club has been asked to initiate an election campaign in regard to the rights of motorists, but has expressed the opinion that the principles which will be before the electorate next month are of such an all-important character that it would be unwise to confuse the issues by special reference to the motorcar, and I think it is right. There is no doubt that the coming election is one of the most important which has taken place for a very great number of years, and I am afraid, seeing that feeling amongst both parties runs so high, that but little notice would be taken of any manifesto which the Club might issue, and certainly the ardent politician who owns a motorcar will not hesitate to place it at the disposal of the candidate whose policy he favours, regardless of that candidate's views on the motor question. But all of us are not politicians, and there is a considerable proportion of the motoring community which worries its head but little about politics, and as everyone is being and will be asked to furnish cars for election purposes, I think it will be quite within their province to reply to the requests of the party organizers to the effect that they decline to do anything of the kind, unless they can be assured of the candidate's soundness on the motor question. I think, too, that provincial clubs and the motorists of any particular constituency can very well combine to elicit the views of the candidates on those matters which affect us. Candidates at Parliamentary elections are often apt to promise anything within reason which their constituents appear to want and to forget those promises afterwards.

In the majority of cases, I have no doubt that both the candidates will be quite ready to give their consent to

MY WAY OF THINKING.—Contd.

our views, and what I think can be done, and what I think, indeed, might even have been done by the R.A.C. is, that all candidates should be asked whether they are in favour of amended legislation which will tend to remove the system of police traps throughout the country, and whether or no they will oppose any further increase in the taxation of motorists and any further curtailment of their

liberties. The attitude of the different candidates throughout the country, as given in ante-election speeches and promises, could well be registered for future reference, so that, in case of their taking, if elected, an opposite course in Parliament, they may at least be reminded of their breach of faith. At the same time, I do think that, regardless of their politics, such rabid anti-motorists as Mr. Cathcart Wason should be refused the use of motor-cars for election purposes as far as possible.



An inter-planetary exchange of courtesies in two flights.

AUSTRALIAN MOTORING.

A Motor Trip to the New England and North Coast Districts.

A PARTY of motorists have just completed an extensive trip to the New England and North Coast district. Leaving Sydney during wet weather, the roads were very wet and sloppy as far as Baulkham Hills; afterwards the roads were dry, continuing through Windsor, Wiseman's Ferry, Wollombi, on to Singleton for the first day's run of 140 miles. This part of the road has always had a very bad name, so naturally the motorists were delighted to find the going considerably better than expected. In fact, with the exception of a few loose patches here and there, the road could be classed as good. The road from Windsor to Wiseman's is not very interesting, but the rest of the road right through to Singleton passes through very pretty and picturesque country, and well repays motorists taking this journey. Singleton or Maitland could be easily reached by any good touring car in one day's run. The journey was continued through Muswellbrook, Scone, and Murrurundi; these roads were good, and Waldron's range, just before arriving at Murrurundi, was safely negotiated. This is an exceedingly steep pitch of about one in five, and at present the surface is in splendid condition. It is considered by many the steepest hill of any on the main roads.

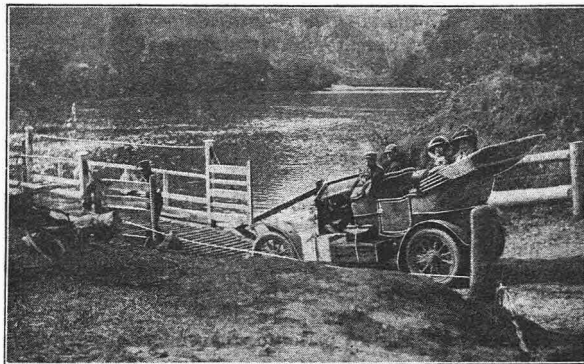
Passing through Goonoo Goonoo Station, the roads were very wet and boggy after the recent rains; in dry weather this road is generally good.

From Tamworth to Armidale the going is also good, but from Armidale to Glen Innes there are a lot of roads that have never been properly formed, but are not very difficult to negotiate with a car, except, of course, in very wet weather.

From Glen Innes through Deepwater, Tenterfield, Drake, Tambulam, Casino, and Lismore these roads can all be classed as excellent, with the exception of a patch near Tabulam and Casino in wet weather, which is pretty bad. The roads all round Lismore are exceedingly well made and in good condition.

Returning via Casino through Lawrence, to Drafton,

Coff's Harbour, the roads are really good for motoring, with probably one or two bad patches of half a mile or so. From Coff's Harbour to Raleigh is noted as the worst road on the North Coast, and in wet weather it is very difficult to get over, but in dry weather motorists need not fear it. Continuing from Raleigh to Macksville, Clybucca, Kempsey, on to Port Macquarie, thence through Cooper-



Crossing Macdonald River.

nook, Fares, Tinonee, Krumbach, to Gloucester, these were all excellent roads through beautiful country. The road from Gloucester, through Stroud to Raymond Terrace, is at present rather cut up, but still is not bad going.

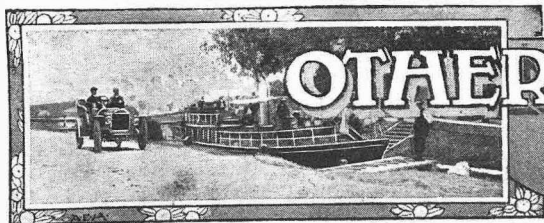
West Maitland was next visited, and a return made via Cessnock, Wollombi, and Wiseman's Ferry.

The car used was a 15 h.p. Talbot; time occupied on the tour, 15 days; and the total distance covered, 1,169 miles.

Hotel accommodation throughout the journey was found excellent, with one or two exceptions.



An interesting contrast. A 15 h.p. Talbot drawn up beside an Australian mail coach at Grafton and Goff's Harbour.



OTHER PEOPLES' VIEWS

NOTE.—These columns are set apart for the discussion of motor topics by bona-fide readers of *THE MOTOR*, and trade letters containing veiled advertisements are not admitted. The Editors are not responsible for opinions expressed by correspondents in this section. Correspondents are asked to keep their letters as short as possible.

The Automobile of the Future.

Long articles have been written on the above subject, advancing absurd and impossible theories, the writers being seemingly unaware (?) that the problem had been solved in a simpler and more efficient way than they thought of, years ago, and that the so-much-desired car could have been in the hands of the public for the last 18 months at least—a car devoid of the power-wasting gearbox and inefficient carburetter.

Two cars were actually on the road last September fitted with engines with a total piston displacement of only 240 cubic in., developing 50 h.p. on a piston speed of 833 ft., using 0.38 pint of ordinary paraffin per h.p. hour. The gas generation and supply was independent of the piston speed, also the scavenging, and both forced, variable cut-off, single control.

A. GORE.

21, Arthur Street, Pilrig, Edinburgh.

A Carburetter Problem.

Can any of your readers give me an opinion on the following? Carburetter is a Wolseley-Siddeley, 1907 type. I made an adjustable sleeve so arranged that it can be screwed up the jet, thus lengthening it. At present it is $\frac{1}{2}$ in. higher than the original height, and this much higher than the petrol level in the float chamber. The engine is now easier to start, and runs very much better, and is two miles per hour faster up a hill on which the car is tested. The engine takes all the air that can be given through an extra air tap. In this damp weather this could not be used at all with the jet of the maker's usual length. I should like to know a likely reason for engine doing so much better on this extended jet. I propose to make a longer one to see the result; the hole in adjustable sleeve is smaller than that sent out by the makers. I could understand its working, say, if only $\frac{1}{8}$ in. higher, but why does it do so much better $\frac{1}{2}$ in. higher than petrol level?

H.U.

New Horse Fodder.

An experience occurred to me this week which may be of interest to others. I left my car unattended outside a shop for about half an hour, and a horse attached to a tradesman's cart was, in the meanwhile, driven up so close behind that the animal could reach my hood. This he did and bit several holes in it and nearly got through in other places. The cart was also unattended. I have claimed on the insurance company, and the owner of the cart has, so I have heard, admitted liability. About £3 damage was done. But the fact remains that horses may find something succulent in Cape-cart hoods.

W.C.H.

Tyre Inquiry.

I would be much obliged to any reader who could give me any information with regard to the Klein tyre, as I am unable to trace it at all in this country. I am under the impression they are made in Spain. Who are the makers? Where can the tyres be obtained? Are they of any special structure, etc?

T.J.F.

"COMMERCIAL MOTOR."

The authority on all matters pertaining to utility motor vehicles.

Fully Illustrated. — Thursdays. One Penny.

Piston Valve Criticisms.

I have pleasure in replying to Mr. Harold Schwann's courteous letter of dissent from my criticisms. I may say at once that I have no desire vindictively to attack the Cooper engine, and shall be only too pleased if this discussion leads to further research, and to the overcoming of some of the many difficulties inherent in the two-stroke system as evolved up to now.

Now, to take Mr. Schwann's points seriatim:

Regarding attenuation, he says that "as the induction chamber of the Cooper engine is *slightly* cooler than the combustion chamber of a four-cycle engine, the attenuation would be less." Granted, the primary attenuation during intake would be slightly less, but, as the charge flows into the combustion chamber proper (which, of course, will be as hot, if not hotter, than in a four-cycle engine, owing to the increased number of ignitions per minute) by displacement, there will be a further expansion of the gas in this chamber, causing a portion of the incoming charge to be left in the valve passage and clearance space under piston, representing more than their volume at atmospheric pressure, so that there are two distinct periods of attenuation in this system. Attenuation of the charge is a serious cause of lack of "life" in engines, and I have increased the power of a 4 in. by 5 in. four-cylinder engine as much as 4 b.h.p. by carefully reducing the combustion space wall area. Then, again, the "slight compression" takes place after the primary period of attenuation, and so cannot help at all. I contend that the system of the engine in question prohibits it from ever getting a really full charge of gas, the volume available for displacement into the combustion chamber only being the stroke multiplied by the inside diameter of piston and minus the volume taken up by the piston rod. The paragraph regarding breaking up of vapour is not clear, the heating period, comprising suction and compression, is one revolution in each case, but, in the Cooper system, the charge is first precipitated against the underside of the piston, of which the top and upper portion of walls must be practically as hot as the combustion space walls, and then transferred into the hot combustion space in a partially heated state, not well suited to withstand the tendency to break up into component gases. In the four-cycle engine the charge can only be acted on by one surface, or, shortly, the charge in the Cooper engine comes into contact with a much greater heated area. The controlling factors in "breaking up" are time and surface to volume of cold gas.

I should rather have said loss of smoothness in running through throttling down than loss of efficiency, and I will take it along with lack of flexibility and clearing out of exhaust gas.

Mr. Schwann admits that the Cooper engine does not ensure the complete clearing of exhaust gas when throttled down, and thereby justifies my statement that this engine does not show any noteworthy advance on previous two-stroke engines, such as to warrant "Engineer's" comments. The effect of mixing a small incoming charge with a large residue of products of combustion is to lead to either misfiring or slow burning, which in turn leads to ignition of the next incoming charge, and derangement of the carburetter by "popping."

This fault of non-clearance is the one great drawback to the two-stroke cycle, and is responsible for the very

O.P.V.—Contd.

limited satisfactory speed range, usually about 800 to 1,200 r.p.m., obtainable.

The very fact of retaining more than a certain percentage of products is very detrimental to efficiency, and I would refer him to Grover's exhaustive inquiries into the effects of the products of combustion on the explosion and mean pressures. Mr. Schwann then raises the old, old cry, "stratification." I can assure him that there is no such thing possible. If he will read up the laws governing the movements of a column of gas, its inertia, and the flow of gases into a partial vacuum, he will find that even the smallest charge would burrow right into the exhaust residue, again tending to misfiring and slow burning. Regarding the entry of petrol into the stuffing gland, any petrol forced down to the rings of a main piston would be at once vaporized and burnt, but the Cooper piston rod being kept quite cool would not have the same power to vaporize it, and so I should expect the petrol to collect in the gland, and tend to thin out, and wash away the lubricant. I have not yet met "Engineer's" body of practical engineers who like glands and cross-heads for internal-combustion engines.

G. TILGHMAN RICHARDS, A.M.I.A.E.,
Consulting Engineer.

Overhauling a Car.

It might interest some of your readers, who are considering the question of overhauling their motorcars to know that I had my seven-seated landaulet, after two years' running, thoroughly overhauled, revarnished, and generally renovated for the sum of £23 15s.: this included fitting a very cleverly-worked-out little tool cupboard and a large new panel.

The firm who undertook the work only kept the car 14 days and returned same in perfect condition.

Parkstone, Beckenham. A. R. TRIMMER.

Enamelling Coach Work.

Has any reader used Velure for this purpose? If so, I should be glad to have details as to method of application to ensure a satisfactory result. O558.

Aviation: Who is Doing Anything?

We notice in the daily Press an announcement that the French Aero Club have already arranged a series of nine meetings for the coming year, with prizes amounting to over £48,000.

What is this country doing?

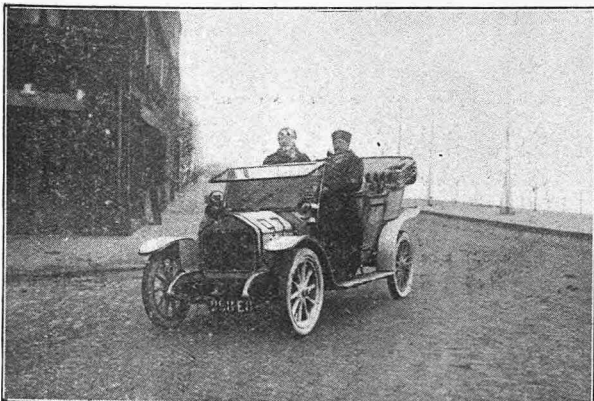
What is our Aero Club doing?

What are our wealthy men doing?

It is useless to ask what the present Government is doing. We think it is quite fair that a manufacturer should ask these questions.

Where are our flying grounds? Are the manufacturers supposed to finance them?

Where is the prize money? Is this to be provided by the manufacturers?



One of the three Aicyon cars that went through the French Trials without loss of a mark.

Who is arranging sporting fixtures for the coming year? Are these to be left to be arranged by speculators?

When the coming year has passed without sufficient progress having been made in this country, it will not be fair to belabour the manufacturers with the old untrue statement that they will not "wake up."

France secured her lead in the motorcar business by a lavish expenditure of money. A similar expenditure must now be made in this country, if satisfactory progress in the art of flight is to be achieved.

At the present time a great many people in this country are interesting themselves in a practical manner in flight. A great deal of work is actually in hand. So far as our own work is concerned, we only regret we cannot more rapidly increase our output. The individuals are at work in the most enthusiastic manner, but where combined effort is necessary, so far as we are aware, very little progress is being made. We should like to suggest that:—

1. A first-class club flying ground (altogether out of the hands of any group of speculators) is urgently needed, not in the most inaccessible region, not in the East End of London, but within easy and pleasant reach of those who live in the wealthy district of London.
2. That a large—really large—prize fund should be collected. Progress in flight will only be attained by an enormous expenditure of money, and it does not seem unreasonable that some small proportion of this expenditure should, by means of this prize fund, be transferred from the active experimenters to the general body of those interested.
3. Some scheme of meetings for the coming year should be arranged and announced as soon as possible.

It will be a thousand pities if the Aero Club loses control of this sport, but they must justify their control. We do not want meetings that will clash; we do not want the control of speculators. We sincerely hope the Aero Club will succeed in securing an orderly advance.

May we add that we hope as little control as possible, by regulations and rules and so on, will be exercised over the designs of the manufacturers. We trust the manufacturers will be left free to try any method which seems to them promising. Novelty is so easily labelled freaks if they are opposed to the rules and regulations of a governing body. NEW ENGINE (MOTOR) CO., LTD.,
J. C. MORT, Director.

Another Complaint from the Colonies.

There is something a little irritating to the average colonial in the smug attitude of British manufacturers towards the recent show, especially when you say (MOTOR, 14th December) editorially: "The motorcar fulfills the requirement of the moment, and there is no ground for departing from it in any material degree."

This is so little the case for me, and, consequently, for thousands of colonials using roads of the same type as I do, that I am forced, after seeing American, British, and French shows, to buy an American motor buggy, because there is no standard car yet made which will run on colonial roads and stand up. The motor buggy does not suit me; it is poorly made, far from luxurious, and of doubtful material, but it will stand up on our roads, and for a year or two, anyway, will get over the roads.

Permit me to mention a few of the many imperfections of this standard car when used on Rand roads, such as are the only ones to be found in most parts of the world.

Wheels must be at least 42 in. and of solid steel; wire wheels are useless, wooden artillery wheels dry out and become dangerous, then swell when exposed to water and are weak for rough use and are badly chewed up by loose rock.

Braking must be on all four wheels. The transmission brake, which still exists on a few good cars, is a curious proof of the innate conservatism of manufacturers. Nothing good can be said, or ever was said, for it.

Drive, if possible, on all four wheels. I know of cars sunk to the rear axle over and over again in sand and loose soil, which gave no hold for the rear wheels. One

O.P.V.—Contd.

car was buried 3 ft. by its own wheels and its owner's shovel was used in keeping the rear axle from dragging on the ground as the wheels buried themselves.

Tonneau seat well between axles. As at present placed, it is torture to ride there over rough roads. Also raised enough to give box room under its foot-boards for spare tyres, extra parts, etc.

Essential engine parts should be high up, so that streams can be crossed, and all nuts on engine and elsewhere cottered. There is no other way to hold them in place on rough roads, and replacement on the road is extremely difficult.

All moving parts must be absolutely dustproof, for colonials, as a rule, live in either dust or mud when on the road.

Steering wheel should be on the left, with all controls on it, and all levers in centre, so that the driver can have help in very bad places.

Doors to open forward.

Oiling must be carried exactly to where it is needed, not left to splash and chance. It is quite easily possible to so arrange oil tubes that, beyond straining oil into the oil tank, no labour is needed, except a clean up once in 5,000 miles. I once drove a car so built, and, therefore, know it can be done.

Petrol tank should hold 25 gallons and be placed low down, and petrol pumped to a small constant-level tank, so high up that no hill or slope will stall a car. Exhaust pressure is a wretched makeshift, and no carburetter can be expected to do its duty under such conditions. It resembles nothing so much in inefficiency as forced feeding of Suffragettes.

Carburetter must be better than any I have tried up to now, for right here is at present one of the weakest spots of motorcars. I have seen carburetter diagram curves for a dozen makes, and one wonders only that gas engines work at all under conditions so disclosed.

Air intakes to carburetter should be so placed as to suck in the minimum of dust. At present enough dust goes through the carburetter on colonial roads quickly to ruin any motor.

Metal only should be employed throughout the car. Wood is most unsuitable, because dry air contracts and splits it, and rain quickly finishes the bad work.

Engine, if (or when) possible, must be air-cooled. Colonials' cars frequently spend the night, with their owners, beside the road, and, like their owners, prefer a heated room on cold winter nights, but do not always get it.

Cars should be finished in some form of enamel paint, for coach-builders' finish is a farce for rough use. Lamps, levers, etc., should be finished in enamel. Brass finish is fit only for a car which has a cleaner home waiting for it and which gets home each night.

Electric light to all lamps from its own dynamo is indispensable. Storage batteries, unless fed from the car's own dynamo, are generally useless in the Colonies, and other forms of lighting (except petroleum) equally useless.

I have seen cars which include one or the other of all these points (except a good carburetter), and still hope that some manufacturer will discover the fortune awaiting the man who first builds a really good dirt-road motorcar. COLONIAL.

[We shall publish something that will interest this and other Colonial readers in an early issue of THE MOTOR.—Eps.]

Self-starting Peculiarity.

Reading "J.C.'s" letter reminds me of an incident I had the other day. After turning the starting handle vigorously with the switch on to no effect, I decided to advance the ignition a little, and springing lightly on the footboard to do so the engine started immediately. I dis-

tinctly heard the coil buzzing before I touched footboard. The car is a 16-20 h.p. Vulcan. CHARLES H. SHARPE.

I, like "J.C.," writing in your issue of 14th December, have experienced the same self-starting peculiarity, but with a 15 h.p. Coventry Humber, purchased in 1907. After running a short distance, I can afterwards start off the switch, if not immediately, it will do so by just giving the car a shake sideways. I have not seen any other make do the same. CHAUFFEUR.

Calcium Chloride Solution as a Non-freezer.

Can any reader give me any particulars or experiences of the use of calcium chloride as a non-freezing solution for use in the water-circulation system? What strength should the solution be to obtain good results?

EL445.

Petrol Economizer Experiences.

The opinions of any of your readers who have had experience with the Gillett-Lehmann petrol economizer on a 15 h.p. Darracq, or similar car, would be greatly appreciated. I am undecided whether to invest in one of the devices or have the complete carburetter.

H. STANLEY THORNTON.

Motoring in Singapore.

Can any of your readers who have been in Singapore tell me whether:—(1) A car would be any use there? (2) A motorcycle any use? (3) Can petrol be readily obtained? (4) Are the roads good? (5) Is the country suitable for gliding or flying?

G.M.T.

Olympia Grumbles.

We are pleased to notice in your last issue your Olympia grumble at the inconvenience caused to visitors by waiting for lunch, but we think there is a more serious grumble than this, viz., want of ventilation. Many visitors and attendants at the exhibits have experienced this from the influenza colds they had caught, and it would be well if the attention of the authorities could be called to the need for better ventilation.

F. W. HENDY.



Into the unknown. A Chiltern Hill road that loses itself.

"MOTOR CYCLING"

The newest illustrated motor newspaper. Full of attractive features and published Monday mornings. ONE PENNY.

INFORMATION BUREAU



SPECIAL NOTICE.

We are at all times pleased to answer any queries put to us by our readers, or to receive correspondence from them upon any motor topic. In consequence of the large number of letters received, however, we must insist upon the following simple rules being adhered to:—

1. Plain writing. Type-writing for preference.
2. All letters to be written on one side of the paper only.
3. Questions to be clear, terse, and to the point, without tedious preamble.
4. Should an immediate reply be required, an envelope must be enclosed bearing a penny stamp, and the name and full address of the sender. NOT a stumped undirected envelope.
5. Questions cannot be answered on the telephone.

E.K.—You will most probably find that quite a number of engines are patented already, working on a somewhat similar cycle of operations. Look up the specifications; it will probably save you a lot of time and considerable expense.

T.D.—(1) So far as we are aware, the engine you inquire about is well made. (2) 15.8 h.p., R.A.C. rating. (3) Maximum revolutions probably 1,600. (4) If the cylinder walls are thick enough to stand re-boring, it is quite a satisfactory method of increasing the power.

A.E.B.—The firing-back trouble may be due to the inlet valves opening slightly too early; but it is also possibly due to the carburettor not being set correctly, with the result that, on coming to a hill, the level of the petrol in the jet falls too low and weakens the mixture. The long axis of the carburettor should be set at right angles to engine, and not lengthwise. First of all, try giving inlet valves later opening by screwing back the tappet slightly.

W.T.—You could drive a dynamo with a 6 h.p. engine taken out of a car, but it would be better to charge a battery of accumulators from it, and run the lamps off this, instead of attempting to light direct from the dynamo. You will require a special bedplate making for the engine and dynamo. It would pay you to adopt the low-voltage system (25 volts) now coming into vogue, and metallic filament lamps of 10 c.p. You could easily run 30 of these together by using a battery of sufficient capacity.

Reversing Connections.

A.S.—Q.—I reverse one of the two accumulators in my 14-16 h.p. car, so that the reversed accumulator has the positive wire attached to its negative pole, and the negative wire to positive pole. The idea being that, when I use the battery that is normally connected, so that the current shall flow through the coil tremblers in one direction, and then when I use the reversed connections, the current shall be reversed in the tremblers, so as to give an action similar to a reversing switch. Is the practice efficient as indicated, or has it any drawbacks? The engine normally sets so that there is not any electrical contact with switch on. To test the tremblers, I switch on and buzz the tremblers by touching the terminals with the free end of a copper wire attached to the steering wheel. Is any harm likely to result to the coil or to the accumulators by following this practice, and if not, would it be correct to run the current through an ammeter from the terminals to the steering pillar, instead of using an ammeter as indicated in the "Motor Manual" under the heading of "Testing Coils"?

A.—(1) The practice of reversing the connections is quite a good one, as it tends to prevent undue wear of the platinum contacts. (2) There is nothing wrong with the method. It is not actually necessary to use an ammeter, because the current flowing in the coil is just the same as when the contact is on. Of course, if you wish to adjust all the

tremblers alike so that an equal current passes through each coil, then it would be a good plan to connect an ammeter in circuit.

Carburation Trouble.

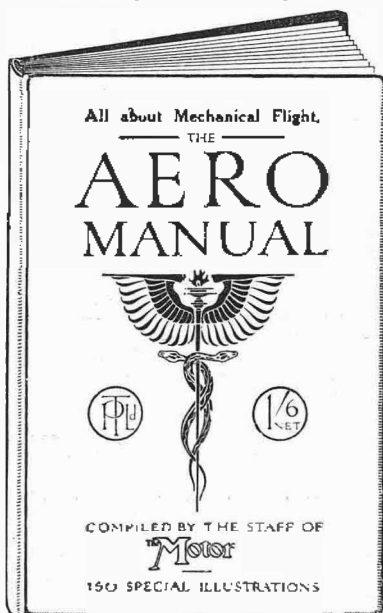
W.A.—Q.—Will you let me know what you consider wrong with my engine, a two-cylinder, horizontal, 12 h.p., mechanical valves. One cylinder is much slower than the other, and, on taking out the exhaust and inlet valves, I find same are covered with a black deposit after quite a short run, the other cylinder being quite normal as regards deposit on valves. The timing of valves is identical for both cylinders, and exhaust valve apparently shuts down on its seating all right, as compression is good.

A.—It is evident from the deposit of carbon on the valves that one cylinder takes in too rich a mixture, and the combustion is incomplete, and power is lost. In some instances this is due to arrangement of inlet piping. You might effect an improvement by providing an adjustable air port on the inlet pipe leading to the defective cylinder. By careful trial, you may be able to weaken the mixture enough to overcome the trouble. Owing to the two firing periods in the usual two-cylinder engine following each other in succession, the carburettor requires very careful setting to avoid flooding on the second suction stroke.

J.C.—(1) It would be impossible to say if the ignition timing is exactly right without diagrams of positions of contacts. Moreover, the best setting in practice does not always agree with theoretical setting. We advise seeing the diagrams in our new "Manual." In any case, your timing cannot be much out, if any, from the particulars sent. (2) The spark occurs always on making contact in the case of a trembler coil. (3) A very slight enlargement of the carburettor jet would tend to make the engine start easier.

C.A.—You cannot adopt the course of transposing the numbers; both numbers must, first of all, be cancelled, and then you can apply for them to be used on the respective cars. The reason is that every number issued applies to a certain car, and can only be used on that car, whilst the registration is under the name of the owner of the car. Having the old numbers will cost the same as new ones.

T.M.C.—Thermo circulation would be the simplest and most convenient, but you would have to get a special radiator and have the existing piping altered to larger diameter. You probably require a new chain fitting. This should prove a remedy for the chain jumping off the cogs of pump.



THE BEST BOOK ON FLYING.

BUREAU.—Contd.

Non-freezing Water Circulation Mixtures.

D.C.B.—Q.—I should be glad of some advice as to the use of glycerine in the water circulation system of motorcars with a view of preventing the water in the cylinder jackets and radiators, etc., freezing in very frosty weather, viz.: (1) What proportion of glycerine to water is required to prevent freezing? (A chemist told me 1 oz. to the gallon of water.) (2) Does the use of such a mixture in the circulation system when the car is not being used at all (or very seldom) during winter do any injury to the metal or pipes of the car I have? (The makers say they do not recommend glycerine because it leaves the circulation sticky.) My present car is a four-cylinder 12 h.p., and I find that the water in the cylinder jackets cannot be run out because the pipe from the cylinders to the pump is entered at the top of the jackets, and is, therefore, above the lowest point of water in them. In my opinion, taps ought to be fitted to each pair of cylinders (at bottom of jackets) to run water off. The makers say that the running off of the water at lowest point would empty the jackets, or nearly so, by suction, and the engine could be run for a minute to dry up what little might be left. Well, I hardly care to risk this, and would prefer to make sure by the use of the glycerine mixture if you can assure me that no injury is likely to be the result of its use.

A.—Glycerine is considered much the best and is most used. It has no action on metal, etc. A suitable strength is one pint glycerine added to one gallon water; this withstands an average frost, for severe frost use 1½ to 2 pints to 1 gallon. You may find that the engine runs a little hotter than normally, and the mixture does not flow quite so easily as water does, but you cannot avoid this (better than risking a cracked cylinder).

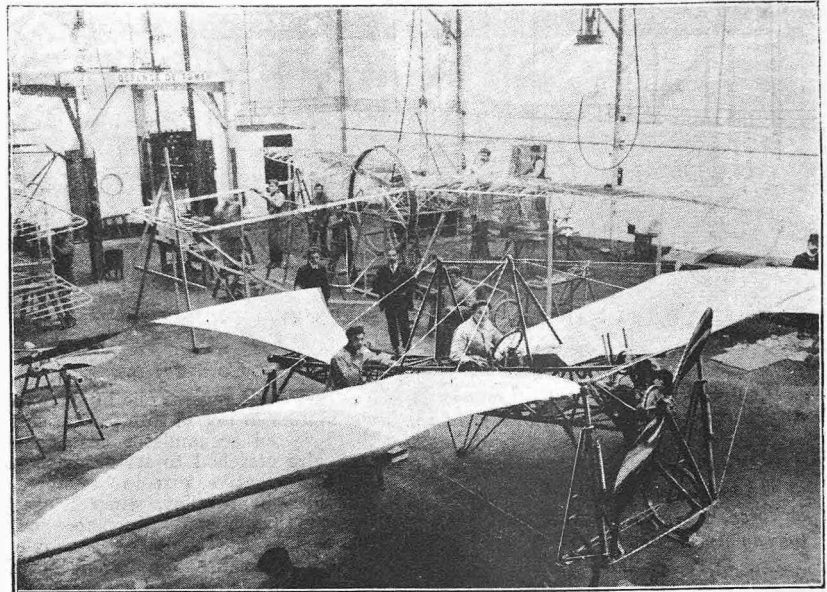
Sparking-plug Fouls.

F.W.—Q.—I have a 14-20 h.p., 1904 type, four-cylinder, the front one of which persistently fouls the sparking-plug with oil, while the others remain dry. The piston rings are all right apparently, one having been renewed with join cut opposite way to the others, with no result. The piston itself seems a very easy fit in cylinder indeed, and I wonder whether this can be source of trouble. What is the proper difference in diameter between piston and cylinder? The cylinder has three upper and one lower ring.

A.—(1) It is most probably due to slack-fitting rings, or this particular cylinder getting too much oil. (2) Some makers adopt a very close piston fit, .002 in. less than cylinder. Others allow up to .005 in.

H.B.—The best course is to cancel the former registration of the car and take out a new one in your own county if you desire it. This relieves you of any responsibility of the former registration. Cost is £1. To transfer the original number to a new car would cost the same.

W.E.—The frequent sticking of the piston rings and loss of compression show that the rings require taking off the piston and the grooves thoroughly cleaning out. You will probably find a good deal of carbon deposit there.



In a French aeroplane factory: de Lesseps monoplanes under construction.

Arranging Two Ignitions on One Plug.

E.V.—Q.—My car (single-cylinder) is fitted with high-tension magneto ignition only. On the whole this gives very satisfactory results, but since the weather has become cold the engine does not start up anything like so readily as it used to. This I know is largely a matter of weak carburation, but from my former experience with trembler coil ignition, I am certain that even with weakened carburation I could obtain a quick start. Will you please tell me how to arrange a trembler coil ignition circuit to work on the magneto plugs? It is not possible to arrange an independent set of plugs on my engine.

A.—The method is based on the use of a change-over high-tension switch. This form of switch has specially well insulated contacts and lever, otherwise it is not different from an ordinary two-way low-tension switch. You connect the high-tension leads of coil and magneto respectively to a switch contact whilst the switch arm or lever is connected direct to the sparking plug, hence with the coil switched into circuit—it is best for this to be done simultaneously with switching over to the high-tension side—the plug will spark from the coil, as soon as the engine is started up you switch over to the magneto side quickly, the contact of which will be alive, hence the plug will now spark from the magneto. It is a simple matter to so devise the switch that as the lever is moved over to the magneto side it breaks a short circuit contact simultaneously on the magneto and also opens the coil circuit. This ensures that the high-tension winding of the coil, and also that of the magneto, will not be strained.

N.P.R. (Montreux).—(1) We can say that all accounts of the system you inquire about that have reached us have been quite favourable. We could not express any definite opinion as to its suitability in the specific instance you mention. The best plan would be for you to put the matter before the makers of the car; possibly they have tested it on some of their cars and can give their experiences.

Locating Non-firing Cylinder on Magneto Ignition.

Ignition.—Q.—I have just had a high-tension magneto fitted to my four-cylinder engine. Will you tell me the best way to test which of the cylinders is not working with this ignition? Does it injure the magneto to disconnect three of the cables, leaving one connected.

A.—The usual method adopted is to disconnect the cables of three sparking plugs at a time, which can be done at the sockets on the magneto. This does not injure the machine, as the sparks then take place at the safety gap. Another method is to put three of the plugs to frame or earth. In some ways this is more convenient. A short piece of well-insulated wire is attached to each plug terminal, and when it is required to cut off the spark at the plug points, the end is brought in contact with the engine. There are also plugs made with a short-circuiting switch; these are very convenient for locating a non-firing cylinder. Sparks passing at the magneto safety gap indicate that one or more cylinders are misfiring.

C.E.R.—We do not advise attempting to remagnetize your magneto with a battery and coil of wire, as it requires practical experience to do it satisfactorily. Much better to send the machine to one of the several firms specializing in magneto repairs (see our advertisements), and who have the necessary appliances for remagnetizing.

A.A.A.—(1) A possible explanation of your engine not starting till the current has been switched on for half a minute is that the sparking points of the plug are partially short-circuited with carbon, and it therefore takes a little time for the current to burn it out and allow the spark to jump across.

Owing to pressure on our space a large number of replies are unavoidably crowded out. We are always pleased to reply, almost by return of post, to inquiries, when a stamped addressed envelope is enclosed. During the past week we have posted replies to 120 readers.

1910

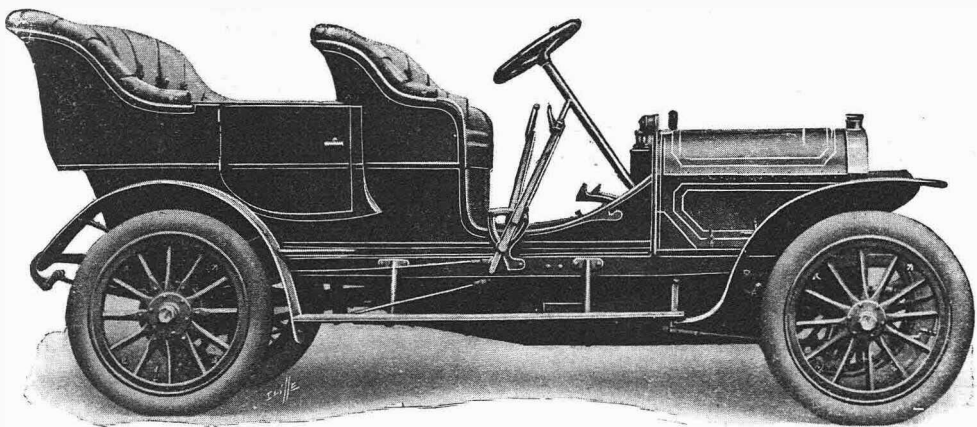
STAR ALL BRITISH. CARS

Brilliant Supremacy of Star Cars during 1909

Our Cars have shown distinct superiority over all competitors in Hill Climbs, Reliability Tests and Speed Trials in which they have taken part.

There is every reason why your new car should be a STAR

They are equal to any other car on the market at £100 more money,
 They are magnificent hill-climbers, and are low in petrol consumption,
 They are capable of easily beating anything of equal horse-power for speed; and last, but not least,
 They are used by The Royal Automobile Club of Great Britain,



15 h.p. Model de Luxe	Price complete, £350
15 h.p. Standard Model	£315
15 h.p. Flying Star, with 2-seated body	£315

Quick Delivery Given. Trial Runs Arranged.

Cars from £250 to £700.

Write for fully-illustrated and priced Catalogue "B," post free.

THE STAR ENGINEERING Co., Ltd., WOLVERHAMPTON.

Sole Selling Rights for the District granted to

LONDON.
 The Star Motor Agency, Ltd.,
 24, 25, 26, Long Acre, W.C.

LUDLOW.
 Ludlow Motor Garage,
 140, Corve Street.

BIRMINGHAM.
 W. Guilding,
 248, Bristol Street.

LIVERPOOL.
 Wooler Bros.
 Dalmeny Street.

PONTYPRIDD.
 C. J. Richards & Co.,
 Cardiff Road.

MISCELLANEA

A neat little catalogue is that of the New Arrol-Johnston Car Co., Ltd., which gives plan and elevation and full specification of their 15 h.p. chassis, which is also illustrated carrying bodies of two different types.

Although the French Government is not inclined to spend money on dirigible balloons, it has decided to accept the offer of a new airship made by the Lebaudy brothers, to replace the ill-fated "Republique." The Panhard-Levassor Co., who engined the "Republique," has also offered a new motor to be fitted to the new airship.

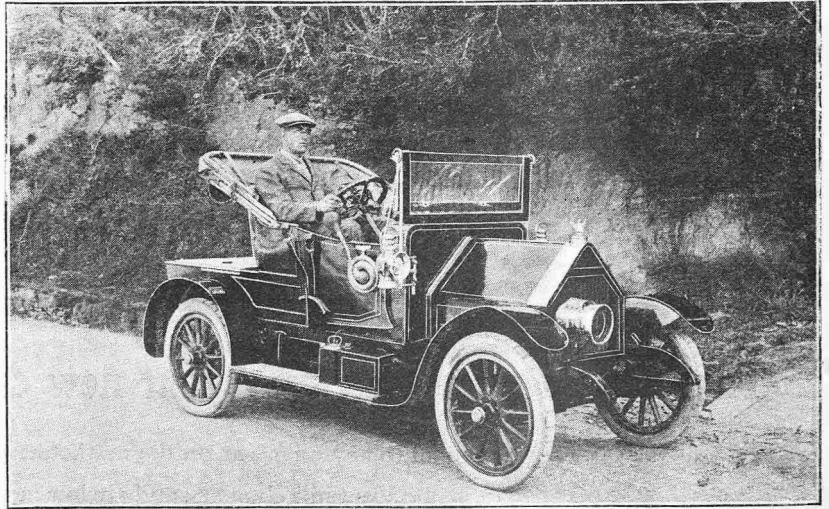
The Kempshall tyre catalogue should prove of especial interest to those motorists who are unfortunate in the matter of their tyres, as, in addition to descriptions of the different patterns of Kempshall tyres and an account of the Kempshall quick-change demountable rim, there are to be found some hints on how to avoid tyre trouble, which should be of value.

No serious damage to either the stock or premises of the New Engine Co. resulted from the fire which broke out in the factory adjoining their works one evening a week or two since. The staff of the New Engine Co. was, fortunately, working overtime, and, when the fire broke out, instructions were given to remove everything possible to a place of safety, which was successfully done.

The Coventry Simplex Engines, Ltd., have just removed to much larger premises at Paynes Lane, Coventry. This step, we understand, was rendered imperative by the exceptionally big demand for Coventry Simplex engines during 1909.

To those who wish to know all about the noiseless Napier motors, we cannot do better than refer them to the latest 1910 catalogue of S. F. Edge (1907), Ltd. Besides containing complete specifications of many of their models, it is also very well and fully illustrated.

The North British Rubber Co., Ltd., will, on application, send to any of our readers a copy of their motor list, with revised prices now in force, and in which will be found full particulars of the North British detachable wheel and the North British deflation alarm valve.



Mr. R. J. Isley who is handling Phoenix cars throughout New Zealand. Photo shows Mr. Isley on a 10-12 h.p. Phoenix outside Wellington, N.Z.

Canada's Fourth National Automobile and Marine Engine Exhibition

MONTREAL, CANADA.

(THE METROPOLIS OF CANADA.)

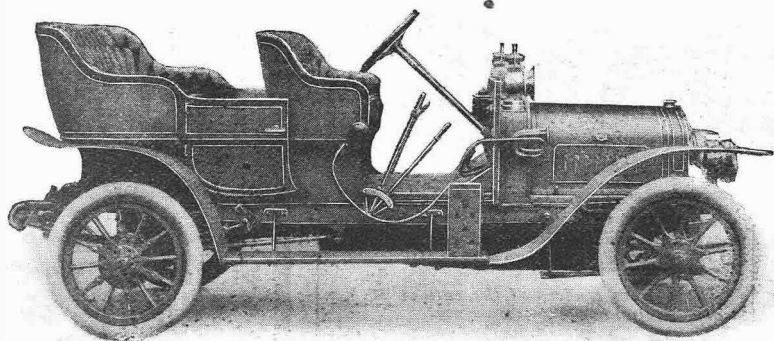
March 26th to April 2nd, 1910.

EXHIBITS ADMITTED FREE OF DUTY.

PRICE OF SPACE—2/6 (two shillings and sixpence) per square foot. This price includes signs and all necessary decorations.

For further particulars apply to

R. M. JAFFRAY, Manager.
St. Lawrence Hall, MONTREAL, CANADA.



*The Car with a
Proved Record.*

The DELAGE

THE DELAGE IS A PERFECT MODEL of the larger cars, but has many extra refinements and improvements. It is a Car with a proved record. It is said that this Car has "the most luxuriously sprung body on light Cars that it has been my pleasure to sit in, an expression of opinion based upon considerable experience with most similar machines sold in England."

AGENTS SHOULD SEE THIS CAR. Will you kindly call or write for Catalogue?

Sole Concessionaires—

LONDON AND PARISIAN MOTOR CO., LTD.,

Telegrams—"Corelio, London." 87, Davies Street, Oxford Street, London, W. Telephone—4224, 4225 Mayfair.

MISCELLANEA.—Contd.

With regard to the German voiturette trials in 1910, as it now transpires that only a tenth of home firms engaged in producing small cars make corresponding engines of more than 6 h.p., according to the German Revenue formula, there is but little likelihood of the proposed maximum limit of 8 h.p. being adopted. Some 30 German firms are turning out small cars.

To run in connection with their Fort-night Technical Lessons in Motoring, Motor Schools, Ltd., Hedden Street, Regent Street, W., have instituted classes in aviation and aeronautics, conducted by a thoroughly qualified instructor. These classes will be re-opened shortly after the Christmas vacation. The fee for the complete course of six lectures is £1 1s.

At the suggestion of the Local Government Board, the R.A.C. solicitor recently attended a conference with a committee of the Chichester City Council, at which the application of that Council for a 10-mile speed limit was discussed. Certain suggestions were made by the solicitor, as the result of which it is hoped that the application will remain in abeyance for the time being.

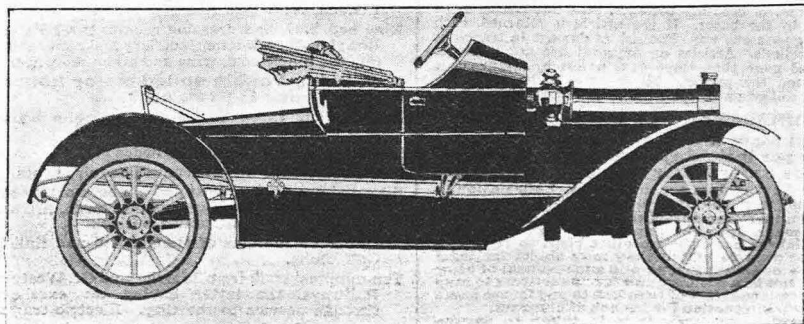
Mr. Robert W. Coan, of 219, Goswell Road, E.C., is this year again presenting his customers with a charming little souvenir in the shape of a pure cast aluminium dish, which is an excellent example of his work. Mr. Coan asks us to say that any of his customers who have not received his souvenir, may, upon application, have one of these cast aluminium dishes sent on to them.

We have received a copy of what must, we think, be fairly considered the most up-to-date motor catalogue of the season. This is one that is claimed to be the first aviation catalogue, sent us by the Aeroplane Supply Co., of 111, Piccadilly, London, W. The compilers say that it has not, in the short time at their disposal, been possible to make the booklet as complete as was intended. Still, we have given it more than a cursory glance, and should imagine that there are few things in connection with the aeroplane which have been omitted. The aviator is sure to be interested in this latest of all catalogues, whilst the layman, by carefully conning its pages, cannot fail to derive instruction from it.

The R.A.C. has from time to time received offers of models of cars or of parts of cars to form a museum, which would allow those interested in the automobile movement to estimate the

progress made from year to year in motorcar construction. Regulations have now been drafted, under which it will be possible for anyone to submit for approval the model of a car or part of a car to be placed in this museum. Other objects of historical interest in connection with the movement may also be accepted if the committee is of opinion that the inclusion of such would help to strengthen the instructive character of the proposed museum. One offer of a model of a car that has been officially tested by the Club in a long-distance trial has already been accepted.

In connection with the Bournemouth First Centenary Fêtes, which will be run on a large scale, there will be an aviation meeting extending over more than seven days. Lord Montagu of Beaulieu has promised his assistance in the aviation section, and will take a prominent part in the organization of the meeting.



New Empress type body fitted to a 15-18 h.p. Bedford.

The Motor Sale and Exchange Section.

NOTICES.

"THE MOTOR" is published in London every Tuesday morning.

Head Offices, 7, 9, 11, 13 and 15, ROSEBERY AVENUE, LONDON, E.C.

Telephone No. 5292 Holborn (four lines).
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Telephone No. 1639 Birmingham.
Telegrams: "Presswork," Birmingham."

SUBSCRIPTIONS.

"THE MOTOR" will be mailed regularly at the following rates:—

	12ms.	6ms.	3ms.
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Canada	8s. 8d.	4s. 4d.	2s. 2d.
Other Colonies and Foreign Countries	16s. 0d.	8s. 0d.	4s. 0d.

REMITTANCES.—Postal Orders, cheques, etc., should be crossed and made payable to "Temple Press Limited." All letters regarding subscriptions must be addressed to "The Manager."

EDITORIAL.—All Editorial Communications and copy must be addressed to "The Editors," and must reach the office not later than first post Saturday morning. If stamps are enclosed with drawings or MSS, which are not considered suitable, same will be returned, but the Editors do not hold themselves responsible for safe keeping or safe return of anything submitted for their consideration.

All articles, drawings, and other contributions paid for and published in this journal are the copyright of the publishers, from whom alone authority to republish or reproduce can be obtained.

ADVERTISEMENTS.

Instructions, matter and passed proofs for advertisements of all kinds must reach this office by WEDNESDAY MORNING, FIRST POST, to ensure insertion in the following Tuesday's issue.

Advertisements of Motorcars, Motorcycles, Accessories, Sundries, etc., from private sellers and buyers are inserted in the "Sale and Exchange" Columns at the rate of

12 WORDS FOR 1/- (Minimum) and One Penny for each additional Word. Advertisements from persons engaged in trading in the articles advertised are accepted at the rate of

12 WORDS FOR 2/- (Minimum) and Two pence for each additional Word. All words in name and address are charged for. Advertisements of Petrol Stores, etc., and Hotels and Resorts, are inserted at the rate of

12 WORDS FOR 1/- (Minimum) and One Penny for each additional Word, with 10 per cent. discount for series of 25, and 20 per cent. for 52 insertions. Cash with order.

The object of the "Sale and Exchange" columns is to assist private persons in procuring or disposing of motorcars, motorcycles, accessories, or other articles of personal property. Business or Trade Advertisements are accepted, but are designated as such. Persons inserting trade advertisements—i.e., advertisements of articles in which the advertiser is engaged in trading—must be liable for the difference in rate between 1d. and 2d. per word.

In the interests of our readers we shall not hesitate to take proceedings against any persons in the trade who succeed in obtaining their advertisements published as "Private," and shall insist to the utmost upon the payment of all law costs incurred.

Advertisers desiring to have replies sent care of "THE MOTOR" may do so on payment of a nominal fee of 6d. to cover booking and cost of forwarding such replies.

DEPOSIT SYSTEM.—For the convenience and security of our readers we have an approval-deposit-system. The intending buyer forwards to our office the amount of the purchase money, which will be acknowledged to both parties. Notes or money order save time. Cheques must be made payable Temple Press Ltd., and are acknowledged to seller when "cleared." If a sale is concluded, we forward to the seller the amount agreed upon. If no sale is made, we return the amount deposited. In either case we deduct a commission of 10 per cent. (5d. in the £) on the amount deposited, to cover our expenses of booking, postage, etc. Carriage is to be paid by the buyer. If the article is returned, each party pays one way. The risk of damage in transit is the seller's. Articles on approval are not to be retained more than three days unless by arrangement between the parties. All disputes to be settled by the arbitration of the Editors of "THE MOTOR."

DISPLAYED ADVERTISEMENTS

of all kinds are inserted in this Section at 15/- per inch, single column. Terms for a series or for larger spaces on application. All advt. orders are subject to confirmation in writing from the Head Office.

All advertisements and contracts are accepted and made upon the express condition that the Publishers have the absolute right to refuse to insert copy to which they may object for legal public or trade reasons and which refusal of copy shall not be a good ground for advertisers to stop a current contract or to refuse to pay for the same or for taking action for breach of contract.

Whilst every precaution is taken to ensure accurate printing, the Publishers will not be responsible for printers' errors.

All communications respecting "Advertisements" must be addressed to "The Manager," THE MOTOR, 7-15, Rosebery Avenue, London, E.C.

Advertisements from private sellers and buyers are inserted in this section at the rate of 1d. per word, minimum charge, 1/-.

Those from traders at the rate of 2d. per word, minimum 2/-.

In the interests of our readers we shall not hesitate to take proceedings against any persons in the trade who succeed in obtaining their advertisements published as "Private," and shall insist to the utmost upon the payment of all law costs incurred.

Motorcars.

(Advertisements received up to 9 a.m. Wed.)

A

ALLDAYS, 10-12 h.p., two-seater, just been overhauled, any examination or trial, £80. Louis Smith, Galgate, Barnard Castle. (Trade 417)

ARIEL, all-British motorcars for the Election, secondhand cars from £75; new cars from £235 to £800; immediate delivery. Ariel Motors, Camberwell. Telephone: Brixton 870 and 1251.

(Trade 232)

ARGYLL—Wm. Whiteley, Ltd., offer for immediate delivery, one 12-14 h.p. four-cylinder 1910 Argyll, fitted with standard side-entrance body, but with special high side doors to front seat, price £290, or, by deferred payments, £80 deposit with order and 12 monthly payments of £18 7s. 6d. Any other cars supplied on similar terms, namely, by a deposit of one-quarter cash with order and the balance, plus 5 per cent. for interest, spread over 12 months. Wm. Whiteley, Ltd., Bayswater, W. (Trade 417)

ARGYLL, 10-12, two-cylinder, Thermo circulation, gate change, hood, folding glass screen, five lamps, splendid condition, any trial, examination courted, only £90. Carter, Motors, Grays. (Trade 417)

STAMPS NOT ACCEPTED.

Payment for advertisements intended for these columns must be made by POSTAL ORDER, payable to "Temple Press Limited" and crossed "London City & Midland Bank, Ltd." When stamps are sent to make up odd amounts they must be permanently affixed to the Postal Order in the space provided.

EXCELLENT OPPORTUNITY. TO BE LET.

An attractive house for a motorist of moderate means.

"LANGHOLME," 5, Montpelier Road, Ealing, London, W.

Nine bed, bath and dressing rooms, three reception lavatory, kitchen, scullery and convenient offices; ample coal, wine and other cellarage.

Good garden. Double-ended motor house, with space for two cars.

Electric light throughout, including motor house and yard.

Telephone, with extension to bedroom. Can be decorated to suit tenant's requirements.

Situated upon the highest and in the most select part of Ealing. Overlooking large private grounds. Most attractive outlook.

Within a few minutes of Hanger Hill and Ealing Golf Clubs.

Ten minutes' walk from District and Gt. Western Railways, the latter having an excellent through service to the City. Electric trams.

Only just offered.

Can be viewed by application to Messrs. Cole and Hicks, Helena Chambers, Ealing Broadway Station.

REPAIR PARTS

Any Repair or Replacement part made exactly to your old pattern.

WE MAKE A SPECIALITY OF

CYLINDER REBORING and GRINDING,

FITTING

NEW PISTONS

AND MAKING

GEARS for all Cars.

THE LAYSTALL MOTOR ENGINEERING WORKS, Ltd.

AUTOMOBILE REPAIRERS.

34, Queen St., London, E.C.

Telephone: 12301 Central. Telegrams: Internally, London.

REPLACEMENTS

COLLEGE GARAGE

55, COLLEGE STREET, Fulham Road, South Kensington, S.W.

Telephone No. 4839 Western.

LANDAULETS.

- 15 h.p. BARRACQ, double landaulet, extension over driver, £140
- 14-18 h.p. DENNIS, single landaulet, 4 cylinders, Aster engine, worm drive, bargain ... £95
- 20 h.p. THORNCROFT, single landaulet, extension over driver £75

TOURING CARS.

- 8 h.p. ROVER, 2-ignitions, 2-seater, side speed change lever, and complete ... £110
- 14 h.p., 4-cylinder MINERVA, absolutely like new, hood, screen, ... £115
- 14-16 h.p. 1908 ARGYLL, side entrance, hood, screen, Stepney, etc., 2-ignitions ... £175
- 2 Brand New 10-12 h.p. MARTINI, 2-seaters, for immediate delivery. Terms upon application.

Several 810 x 90, 815 x 105, 820 x 120 Tyres, both new and second-hand, to clear at Bargain Prices.

SPECIALITIES.

The College 8-day Clock, guaranteed, 21/- each, in Brass case for fixing to dash. The College Tool Kit, English Tools, 16/- each.

SATISFACTION GUARANTEED.