MOTORING NOTES.

By C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

Motor Tuition.

IN a recent number of THE LANCET I made mention of Motor Schools, Limited, and as some colleagues have since written inquiring about that establishment I availed myself of an invitation from Mr. Turberville Smith, the managing director, to look over the institution and the interesting collection of sectioned models. The premises contain two instruction rooms and a workshop, while there are no fewer than five modern cars for the purpose of giving lessons in driving. Four of these cars are four-cylinder, of 14–20 h.p., and a 20–30 h.p. automobile is provided for advanced pupils. All are so arranged that the instructor, seated beside the student who is driving, also has command, a duplicate control being fitted, which is certainly an admirable precaution against accidents. One of the rooms is used solely as a lecture room, and the time table provides for a different subject on each day of the week, and the course is now extended to cover a fortnight, and embraces the cycle of operations—carburettors, accumulators, coils, wiring, 4- and 6-cylinder engines, synchronised ignition, low and high tension magnetos, water circulation, clutches and gears, live axle and chain drive, the working of the differential, brakes, steering, and lubricators, and the removal and replacement of tyres. The models and other parts are cut open so that a clear view can be obtained of their interior construction, just as “pickles” are shown in an anatomical museum, and as they are mounted very accessibly on benches the student can actually handle, dismount, and re-erect the parts. The working machinery is connected on to a central shaft driven by an electric motor, and thus the mechanism can be followed when actually at work. Another room is used for private lessons, and likewise contains models illustrating the various features of motor construction. At the time of my visit a practical demonstration was being given on magnetos, with the different types at work and attached to sparking plugs, and the scholar was being initiated into the causes of hysteria of the spark plug, neurasthenia of the commutator, myelitis of the armature, locomotor ataxia of the secondary wires, degeneration of accumulators, &c. On a neighbouring bench there was a cylinder, which showed well why insufficient lubrication might cause dry pleurisy and laboured breathing, and also how backward pressure would result if the valves were incompetent, and a sectioned radiator demonstrated how arterio-sclerosis of the radiator would produce feeble circulation of the water. From what I saw it seemed to me that the place was well equipped and that every facility is provided to instruct the would-be motorist. In automobilism, as in medicine, even after passing through a course, the young graduate has still much to learn, but he will, I am sure, be able to understand much more easily the lessons to be obtained by driving and owning a car if he first passes through such a training as the one to be had at Motor Schools, Limited.

Concerning Steam-cars.

Recently there was a letter in THE LANCET asking for steam-car experiences. Steam-cars certainly do not seem to have up to the present attained the popularity of the petrol-propelled automobile, anyway for light cars. With a steam-car cheaper fuel, such as paraffin, may be used, but then more fuel is needed. A steam-car is free from vibration, noise, and smell, and has greater engine flexibility, but it is longer in starting up; with most at least 10 or 15 minutes are required to get steam up, and unless petrol is used the fire is frequently a trouble. The great objection, however, is the attention they need: steam joints are apt to blow and the boilers are an incessant cause for repairs. Most now are fitted with condensing engines, so that the water may be used over again; thus there is but little relatively needed and distilled water can be employed; if ordinary water is used there is a danger that with the rush generated by the steam lime salts may be swept into the engine, and, to put it mildly, lime salts are the reverse of good lubricants. The writer knows of a medical man who is the possessor of a steam as well as a petrol car, and he has noted that the petrol car is out nearly every day, but the steam car only on rare occasions. He also knows of an engineer with large works who once bought a steam car, and

got rid of it because it always required “tinkering.” For heavy vehicles, such as brewers’ drays, where cheap fuel is an important point, and on which coal or coke can be used, the advantage may be in favour of steam, but for light cars, such as the profession need, the balance of opinion is certainly in favour of petrol, not only because less attention is needed but also because no hand-pump is required on starting to force water into the flash boiler, there is no burner to attend to, and no boiler to retain in repair.

Electric Light for Cars.

As Dr. J. B. Emmerson recently pointed out in a letter in THE LANCET, electric lights are especially useful to the medical motorist—merely a switch to push over and the two side and rear lamps are alight. No need now to walk round in the mud and to waste time and temper, perhaps in a gale of wind, to light the oil lamps, no matches, no waiting, but from one’s seat all can be switched on. One 4-volt 60 ampère accumulator is enough for the three, and even if a spark accumulator is carried the two can easily be placed in a box on the footboard and the cost of re-charging is nominal. Among many excellent types may be mentioned the productions of Messrs. Vandervell and Co. of Warple Way, Acton Vale, and the Sylverlyte Electric Lamp Company of Poland-street, W. These firms also manufacture head-lights which appear to have unusual powers of penetrating fog, but for ordinary medical work the reflectors fitted to the side lamps throw a powerful light sufficiently ahead to obviate the need of a head-light. The chief peculiarity of the Sylverlyte Company is that their bulb is embedded in the lens, so that the rays of light from the electric bulb are collected and magnified inside the lens and thrown forward through the convex surface. Another advantage of this type of lighting is that little cleaning is needed, and considering the trouble of other methods of lighting they seem as if they will be a boon to motoring doctors.

Looking Back.

FROM

THE LANCET, SATURDAY, Sept. 24th, 1831.

SEVERE CASE OF CHOLERA.

To the Editor of THE LANCET.

SIR,—Observing in THE LANCET of the 20th of last month, some interesting remarks on the English cholera, by Mr. Wilson, I beg to state that among a prodigious number of these cases which have lately fallen under my care, there was one, the symptoms of which I think were more distressing than either of those mentioned by Mr. Wilson. The patient, aged 66, was a nurse in St. Giles’s workhouse, who, it appears, went to bed perfectly well on the 2nd of this month, and about an hour after was attacked with most distressing vomiting and purging, and with cramps in every part of her body to such a degree, that her arms were drawn up to her shoulders, the fingers completely shut, the feet and toes drawn upwards, and the calves of her legs in large knots, and a prickling sensation was felt all over her body, the face not excepted. The ward she slept in was in a most distant part of the house, and owing to a mistake in locking a door which is usually kept open all night, and the key taken away, she could not obtain my assistance till the morning, when I never witnessed a human countenance so ghastly; her face was almost blue, the cheeks were hollow, the eyes sunken and wide open, with a wild stare, she had cold clammy sweats, and the pulse was almost imperceptible.

In such a deplorable case I confess I was at a loss to know how I could relieve this poor creature; but as there was no time to be lost, I first directed her legs to be put in warm water up to the knees, and well rubbed with warm flannels, and wrapped in flannels made hot. The arms were rubbed with soap liniment, opium, and ammonia, and were also wrapped in flannel. I gave her a mixture of brandy, and full doses of opium and ether every hour, each dose of which her stomach rejected. I then gave an effervescing draught of mint water, opium, and a little brandy every hour, which remained on the stomach, and after taking three doses the vomiting nearly subsided, and she slept for an

hour. I continued these draughts every three hours, and she had some more refreshing sleep. Vomiting now entirely ceased, but the purging went on, for which the chalk mixture, *Kino, pulv. rhei*, and *tinot. opii*, were given, which reduced the number of motions from four in an hour to one. I continued this all day, giving occasionally a little warm wine and water. In the course of the evening reaction came on, the pulse got up, the skin became warm and moist, and the spasms nearly left her except a trifling prickling sensation in the wrists and insteps; in fact, her face assumed its natural colour, and she considered herself getting well, but was very sore and weak. At length, however, this poor woman, ten days having elapsed, has recovered from a state of suffering not easily to be described, but whether from the assistance she received, or from nature, the medical reader will decide. I remain, Sir, very respectfully, your obedient servant,

St. Giles's Workhouse,
Sept. 12th, 1831.

J. BURGESS,
House-Apothecary, &c. &c.

THE BORSTAL SYSTEM FOR THE TREATMENT OF JUVENILE- ADULT CRIMINALS.

I.

AMONGST the less loudly advertised measures of social reform which are to be set down to the credit of the present Parliament, and some of which will probably be regarded in the future as better assets to its reputation than many of the controversial proposals that arouse the emotions of the party politician, the Prevention of Crime Act is specially deserving of note as giving legislative sanction to the most important attempt yet made in this country to deal with the problem of criminality on scientific lines. It will be in the recollection of our readers that the measure in question has as its specific aim to stamp out the professional form of crime, and that in pursuance of that aim it legalises two new penal methods, each adapted to a distinct stage in the evolution of the professional criminal. For the adolescent offender, who may be considered to be in the immature and curable phase of the criminal habit, the new law provides a system of penal discipline which is essentially reformatory; while for the adult recidivist in whom that habit has become relatively fixed and irremediable it authorises a sentence of preventive detention in a sort of penal asylum under less rigorous conditions than prevail in the ordinary convict prison. In this penal asylum the reclamation of the criminal will, of course, still be retained as an ideal aim, but it will be recognised that the prospect of its realisation is too remote and too dubious to justify the more costly and elaborate measures which may be reasonably used in the case of less hardened offenders. While therefore this part of the Act will commend itself to everyone who has any practical knowledge of the criminal as a necessary though regrettable method for the protection of the community, it has much less interest than the constructive proposals for the treatment of the youthful offender. The gist of these proposals, as set out in the Act, is that a youth of what is known as juvenile-adult age—i.e., between 16 and 21 years—who is convicted of an indictable offence and is deemed likely to become a habitual criminal may, in lieu of the ordinary punishment by a fixed term of penal servitude or imprisonment, be committed to a State reformatory under an indeterminate sentence with a maximum limit of three years. During the period of detention he will be treated by those corrective methods which, since their inauguration some years ago at the Borstal prison for juvenile-adults, have been known under the name of the Borstal System; and the reformatories to be founded under the Act will perpetuate the memory of this origin in their official title of Borstal Institutions. In effect, then, what this measure does is to signify the definite adoption of the Borstal System as the approved means for the treatment of the young offender who is in the way to become a professional criminal; and therefore, in order to judge of its real value, we have first to inquire what are the methods that characterise this disciplinary system and what are the principles that underlie these methods. It will be the object of the present article to answer these questions, and thereby to show the strong claims which the Borstal experiment has on the

interest and sympathy of all who desiderate the infusion of the scientific spirit into the treatment of the criminal.

The Borstal system owes its origin to the present chairman of the Prison Commission, Sir Evelyn Ruggles-Brise, K.C.B., and, like the other reforms in penal methods which have been carried out under his *régime*, it is based on the principle that punishment in its legal sense, in so far as it is not a mere act of social vengeance but purports to exercise a reformatory influence, ought to be as far as possible individualised, that, to vary the popular formula, it is more important to make the punishment fit the criminal than to make it fit the crime. Translated into terms of what is practicable, this means that different classes of criminals require different methods of treatment, and that therefore the first step in devising a rational penal system is to differentiate the several classes of delinquents and to ascertain the characteristics and the natural history of each class as a guide to the particular treatment which is suitable to it. Such a system, based on the patient study of facts, cannot, of course, pretend to the completeness and the finality of the systems deduced *en bloc* from *a priori* conceptions of the psychology of crime; it must, on the contrary, be built up gradually as each category of criminals in turn is defined and separated from the mass, and it must be susceptible, too, of growth and modification under the influence of new facts and new ideas.

It is after this fashion that the Borstal system has been framed. It is a reasoned plan for dealing with one particular aspect of the problem of crime which is of pre-eminent importance from the social point of view—namely, the development of the adolescent into the professional criminal—and it is founded on the results of a careful scrutiny of the conditions under which this evolution ordinarily occurs and of the characteristics of the professional delinquent as a finished product and in the making. In such an inquiry the first point that falls to be considered is what part in the genesis of the professional criminal belongs to innate disposition and what to the influence of the environment. This is, of course, a question which is constantly being discussed about criminals in general, and, as can be readily understood in view of the heterogeneity of the material that is embraced under that title, it is discussed to very little purpose. But futile as it obviously must be in its application to criminals in the aggregate, when asked, as in the present instance, with reference to a particular category of criminals, it is not only a reasonable but a very necessary question, since on the answer to it depends not merely the choice of the appropriate method of treatment but even the decision as to whether treatment can be of any use at all. For, whatever the fanatics of sentimentalism may say to the contrary, it is tolerably certain that if we have to do with moral idiots and instinctive criminals foredoomed to ill-doing by the tyranny of their organisation, our efforts to turn them into useful citizens will be a mere waste of labour. What we have to inquire, then, is how this matter stands with regard to the particular class of criminals we are here considering; do we find that the professional criminal shows any characteristics from which we may infer that he has become what he is through some congenital vice of cerebral development? This question can only be answered in a rough and approximate way because the nature of these characteristics is still very doubtful; but there is enough evidence available to warrant at least a general conclusion which will be sufficiently near the truth for practical purposes. This evidence goes to show that, whether we consider the adolescent or the hardened recidivist, the professional criminal cannot be assigned to a morbid or degenerate type. Thus the so-called stigmata of degeneracy, whether somatic or psychical, are rare in such criminals, and those that are met with are more usually of the kind that may be ascribed to nutritional disorders in childhood. Again, the professional criminal does not suffer from the neuroses so commonly met with in the weak-minded delinquent; and—though on this point the evidence is still quite fragmentary and of very doubtful value—there is reason to think that definite hereditary taint is not very common in the families of these offenders. Moreover, their mental capacity is much more often above than below the usual level of the social class to which they belong. It is true that, like the general mass of criminals, they are on an average physically inferior to the non-criminal population, but this fact, so far from supporting the theory of innate defect as the cause of their delinquency, can be at least as well and perhaps better interpreted as an effect of