ejected from the seat but does not prevent jack-knifing, and it is essential at least for the driver and front seat passenger to wear shoulder straps as well as lap straps. If the lap strap is fixed a little too high and doesn't allow free flexion of the hip joint, it may injure the back.

At Cornell University where car crashes have been studied, in one instance all the occupants of a car were seriously injured, but the car also contained a crate of eggs that were well packaged, and very few of the eggs were broken. The value of packaging was demonstrated by Cornell research workers after study of many accidents, and they designed the Cornell Safety Car financed by companies who haven't been taken the slightest bit of notice of in the design of production cars. This is because the motor industry cannot afford to suggest that a motor car is dangerous, otherwise they can't sell it.

DISCUSSION

W. N. Leak, M.D. (*Winsford, Cheshire*):

I am particularly struck by what Mr Gissane said about our being in the middle of an accident epidemic. I am interested in epidemics because in 1919, when I was in the R.A.M.C., I was responsible for the public health of a third of Palestine, and had to be ready to cope with outbreaks of cholera, typhus, or smallpox, as well as endemic and epidemic malaria. As port officer for Jaffa, I received telegrams twice a day telling me the state of health of all the ports from Hong Kong to Gibraltar. In my time we only had four epidemics. We had a virulent attack of measles in Nablus which killed over 60 per cent of all the children under one year. We had a queer attack of influenza pandemic in one village. Then we had a curious attack, all over Palestine, of what I presume was desert sore. And, finally, two villages were attacked by malignant malaria, which killed 1.5 per cent of the population every day, that is 8 to 10 deaths in a population of five or six hundred. Curiously enough, news of this reached the Foreign Office, and the result was almost unbelievable. We were given unlimited credit to eradicate malaria, I was put in charge of this work, and within two years malaria was practically banished from Palestine.

I tell you this because it presses home the point that if we are to meet epidemics, we must have organization, and organization

needs men and money, but the cost is very little compared with that of letting epidemics spread unchecked. Yet governments often need something dramatic, like those two villages of mine being wiped out in a few months as they would have been through malaria, before they are stirred into action.

Our government has wisely spent millions to control poliomyelitis, diphtheria, whooping cough, and so on, and I hope and pray that one result of this symposium will be a real clarion call to the country, and to the government, to devise and finance what is required to meet this accident epidemic.

Year after year at B.M.A. annual meetings I have said that the ordinary citizen involved in road or other accidents is entitled to expect prompt and proper treatment, but today in most parts of the country it is not so. People say Mr Gissane has a bee in his bonnet about this matter, and so have I, and I hope that all of you will have by the end of this meeting, because if we are united we can move governments, we might even move the Ministry of Health, and if so we can save many lives and untold suffering and loss.

I think the greatest need is not so much to raise the status of those who treat accidents, important though that is, but to have a dozen or so surgeons throughout the country, whose prime job it is to see that casualty services in their areas are properly organized and staffed. These men should be young enough to stand the strain involved, but also senior enough to talk to chief constables, senior county officials and chairmen, industrialists, regional hospital boards, and individual hospitals. Given these men, armed with authority from the government and provided with proper funds, the whole aspect of casualty work could be changed almost overnight. Organization is the key, but men and women are needed to make it turn in the lock.

J. C. Scott, M.A., M.D., M.S., F.R.C.S. (*Director, Accident Service, Radcliffe Infirmary*)*:*

The problem is really enormous and requires immediate tackling. Many of you will be aware that we demonstrated from a social review in Oxford that there has been a 600 per cent increase in the number of fractures round the hip in the elderly, and that is taking into account the increased age of the population and all the other figures that might play the increase down. There are six fractures now for every one that there was in a similar population before the war. What is the general direction of organization we should follow to try and deal with this problem? The first thing to emphasize is that this is a joint problem; it is not just a general practitioner's or a specialist's problem. Every person dealing with any branch

of medicine or associated with medicine has his part to play in trying to solve it.

The minor injuries which Mr Gissane has emphasized do not get nearly enough emphasis, yet there are so many minor injuries that they represent an enormous potential source of morbidity in the country, though on the whole they tend to be ignored. They tend to fall into the background in relation to the major injuries, which are the ones which find the headlines, and which generally tend to dominate the organization to an extent that they should not be allowed to do at all.

The casualty department is our first common problem about which there is no agreement. Agreement must surely take the line that there must be for both major and minor injuries a first-class 24-hour service, for all the population without long waiting. In some places the service will be made available largely by general practitioners, in other places the work will be done largely by the hospital. This is a matter of agreement and not a matter that should be allowed to happen haphazardly as has been done in the past. One of the important things is that there are many casualty departments being built in the country at the moment without any accepted pattern of how they are going to be organized; it will be found that the buildings are defective and unsatisfactory on that account. I do not want to pass over the enormous number of intermediate injuries; they are terribly important, but on the whole they are the sort that have in the past received a reasonable standard of treatment in the organization.

The problem of major injuries is quite simply a matter of staff and accommodation. The problem of adequate staff in all fields in the hospital world at the moment is, as I am sure you will know, acute in every possible way, almost to the point of breakdown, and this, I think, is a problem that must be faced by all of us who are concerned with the question of dealing with accidents. This is where we save life, this is our particular problem in attempting to deal with the organization for accidents at the highest possible level, and it is in that particular branch that perhaps the surgeon, of whatever variety he be, in the hospital has his particular part to play. We welcome the attention focused on this problem from wherever it comes. It is quite extraordinary how often this problem has to be repeated, how often these statistics have to be shown, and what an enormous weight of public opinion is required to move into doing anything effective in regard to the problem.

In conclusion, may I just say that we in the medical profession, with all the calls on our time, have not had the opportunity to devote as much effort and to make as much progress in this field as we should, but I do not think it is quite fair to suggest, as perhaps has

been done in a recent document, that the medical profession has been entirely dragging its feet. Mr Gissane was provocative about the type of surgeon who is going to do this work, but it seems to me that he is saying that to deal with traumatic surgery we do not want a new type of surgeon called a traumatic surgeon but a new type called a general surgeon.

The Chairman: There are one or two points that I would like to make here. Particularly I like Mr Gissane's reference to the progressive illness of trauma. We do not realize enough, I think, the general background of trauma. And one of the great contributions of the Birmingham School of Accident Surgery is the recognition of the progressive and serious, often general, illness of trauma.

I was very interested in Dr Leak's discussion of epidemiology leading as it does to organization; organization starts from the beginning, and that is where those of you who are in general practice come in very much. How are we going to organize initial treatment, because initial treatment determines sound rehabilitation?

One of my junior colleagues has recently been appalled at the number of motor cycle accidents which we have in Devon. After he had written to *The Times* on this subject, someone wrote and asked why we should interfere with the sports of these young men; why go for the motor cyclists, when we do nothing about publicizing the accident rate among other sports. On the day on which that letter appeared all the hospitals of Devon were circularized and we found that there were over 30 motor-cycle accident patients in hospital, and there were five people suffering from other sport injuries. The latter included riding, rugby, and one fishing accident.

J. Fry, M.D., F.R.C.S. (*Beckenham*): I was formerly a casualty officer at a London teaching hospital, and I hope that what I have to say concerns casualty departments and services; having recently worked in one, I feel that I am qualified to speak on these matters. There seem to be two main problems now facing casualty departments. One is that they are no longer used purely for accidents, but have several functions. In the figures that we collected, only 50 per cent of the cases were due to trauma or injury in any way. That is, there were 50 per cent which could not be called accidents in any way. We discussed this problem of the casual attender, and we felt that it had to be dealt with in some way. It was becoming quite a social problem to discover why these people came to the casualty department when they were really not, strictly speaking, injuries or casualties. We found that there were many reasons, but chiefly, because there was no general practitioner available to them, they used it as an alternative to a practitioner. Either they

did not like their own family doctor or they felt that the hospital was always open to them and that they did not have to confine themselves to surgery hours, and sometimes they simply wanted a second opinion. Often they were not in their own family doctor's district, and they used the hospital for this reason. We felt that because we had to deal with these casuals, we did not really have enough time to devote our attention to the true casualty problems, and we felt that we must have some backing from management committees and the hierarchy of the hospitals to see that we did have time to deal with these people.

The second problem is the staffing of casualty departments. We have no specific training. A casualty officer qualifies and moves straight in, and an H.S. or an H.P. is not under registrars or consultants who actually train juniors in dealing with minor injuries and sepsis. We did not think that major accidents were such a problem; they only form about two per cent of our total cases, and we always refer them straight away to the orthopaedic or general surgeon. The question of future staffing of casualty departments is important, because a large percentage of the work is not only concerned with accident and trauma, and therefore general surgeons and orthopaedic surgeons are not the only ones to be employed in a casualty department. A lot of our problems were social or psychiatric and they present just as many difficulties.

W. D. Coltart, M.B., B.S., F.R.C.S. (*Orthopaedic surgeon, St Bartholomew's Hospital, London*): It seems to me that we have to state that there is a problem, an increasing problem, as regards the number of accidents, and there is some deficiency in the way in which they are dealt with, but up to now none of the speakers has really made it very clear just what the deficiency is. We shall have to decide what are the deficiencies in hospital treatment of accident cases, and what are the deficiencies—if any—in their treatment by general practitioners.

There is one point which I did note. Dr McGregor said that general practitioners do not send patients to orthopaedic surgeons any more than can be helped. That is an admirable thought, but the difficulty is that the patients sometimes come too late, and the general practitioner's difficulty is to decide which of the apparently trivial cases can be sent straight to hospital and which he can afford to look after himself. That is a problem which the general practitioner at present has great difficulty in solving, particularly as he has not full access to radiographs and perhaps not full knowledge of the minor accidents which may lead to prolonged and serious disability.

The Chairman: Of first importance at the present moment is prevention. The question of first-aid treatment and the place of the

general practitioner is coming a little later in our discussion and I would like to hear some more discussion of prevention.

J. N. Wilson, CH.M., F.R.C.S. (*Consultant orthopaedic surgeon, Royal National Orthopaedic Hospital, London*): I would rather like to ask Mr Gissane a question about safety belts. It has been worrying me for some time, and I think that this is something we ought to think about. My feeling is that we are barking up the wrong tree completely on this question of safety belts. I think it is absolutely wrong. The injury we are trying to prevent to a certain extent by safety belts, the bad injury, is the throwing of the passenger or the driver against the front part of the car, and particularly the driver, being stoved in by the steering wheel. The snag is this, I quite agree that the person unstrapped is going to be thrown against the front of the car, but with modern car construction the car comes in at him, and no safety belt is going to stop this. Unless we build cars that are safe, then it is no use putting a safety belt into them. You can see this from Donald Campbell's recent experience. He had a car that was properly made, he was strapped into it, he was thrown all over the place, and he came out alive. But in the modern car of our type you can just imagine what he would have been like. If you ask a racing driver who is driving an open car whether he wants to wear a safety belt, the majority of them don't, because they know that if they hit something they are better to get out, and take the risk of going out, than they are to stay inside.

P. R. Headley, M.B., B.CHIR. (*Sevenoaks*): Could I just take the matter of prevention one stage further back, and ask if we could discuss among ourselves what is it that gets into us when we get into a car? Why are we different people driving a car than when we are sitting about or walking on the pavement? What devil is it that possesses us, and how can we cast him out?

J. S. Westwater, M.D., D.P.H. (*Deputy senior administrative medical officer, South-west Regional Hospital Board*): I merely observe that if you wish to tackle prevention, you must have a national organization of information. In epidemiology we rely on notification, and it seems to me that an organized national system of recording these accidents is required. If you increase your net cover of information you will more quickly arrive at the origins of accidents, having arrived at the origins, you can then learn methods of prevention. If you have enough information recorded you get your results quickly and in a form which is conclusive.

The Chairman: I wonder whether we make full use of the information that we already have. I am amazed at the amount of information which the police can give me about accidents, sites and types of injury and so forth, and there is the National Bureau which is fully

informed, but there is a conspiracy of silence in this. We are not told sufficient.

Dr J. Fry: Speaking of prevention, could I ask Mr Gissane if he has any information as to what cars are the most liable to suffer accidents?

Mr Gissane: I would require notice of that question. But I would like to answer a question that was put to me before. It is true, of course, that if a driver is strapped by his safety belt and shoulder harness in his seat, and the engine comes back and falls against his chest, he is not very well protected. But I would ask how often that happens? We have been looking at accidents and taking photographs of cars, and it is much more common for the car occupant to be ejected from his seat and thrown against internal fittings in the car. It would be utterly wrong to recommend safety harness as preventing all injuries of all descriptions, but I am quite convinced, after using harness for a few years and having been in one accident in which I was wearing it, and thank goodness I was wearing it, that it is a considerable advance in safety precaution. I deplore the remarks made against it, but I will write a nice obituary notice when that speaker gets hit.

R. Cove-Smith, M.B., CH.B., M.R.C.P., D.P.H. (*London*)*:* Accidents are really the results of unsafe acts, and I think that it is the repeated unsafe acts that we have to attack. Can we go, as a previous speaker said, one stage further back in dealing with accidents? If we are going to deal with prevention we must deal with the unsafe act. Structural deficiency in houses, carelessness in yards outside where stuff is left lying about, these are the sort of things that the general practitioner can see and talk to his patients about, as he can about lack of supervision of the infant and the aged. It was mentioned that old ladies get sprains and falls and broken bones. Of course the elderly these days have to do a lot more housework than they were trained for in their younger days. In their younger days they could get a paid assistant. Some of the 60 and 70 year-olds in their early days had maids and assistants in the home, and now they are having to use muscles that were not trained adquately for the sort of work they are having to do. Other unsafe practices include smoking in bed, and the use of chairs and boxes instead of proper step ladders to fix light fittings. No doctor, surgeon, or physician really has a monopoly of prevention; it's a job for everybody, and perhaps a job where the general practitioner can caution patients a little more effectively.

The Chairman: The road accident problem is the one that is most in our minds, and in Devon we are very concerned about summer accidents, but the interesting thing is that though traffic in the Devon

roads increases, I suppose, something between seven to ten fold in the months of June, July, August, the accident rate does not increase *pari passu*. The accidents are about twice as many in the summer months: rather more than twice in July. It is the problems of the transport in the rest of the year which is of importance, not what happens in the summer months.

We have to think again about roads, and I would suggest that we have to devise an intermediate plane of travel, between the ground and the sky. This is revolutionary, but we have to think in revolutionary terms if we are going to deal with the problem of getting people from one place to another. Perhaps we need a mono-rail, on which cars are slung, so that people at the end of their journey will have their cars, which will be spaced at regular intervals on the line. They will travel at 50 miles an hour and get you safely to the end of your journey, with 25 mile stops on the way for natural purposes. That is the sort of problem I feel that we have got to plan for in the future, but we have got to go right back to the very beginning in the prevention of accidents. In answer to Dr Headley, I would say that the biggest problem is psychological. You get on the road and you meet with frustration almost immediately. Frustration and impatience is really responsible for much of our problem.

Mr Scott: Dr Fry commented on the casualty department and asked one or two questions about it. I would like to say that I think that Dr Fry's casualty department is entirely untypical of what exists in the country; it is typical of what exists on the fringe of some of our large cities, and on that account presents special problems. Unfortunately, there is a tendency to tackle the national problem on that basis. I believe that the highest figure for any of the casualty departments investigated in a recent study was 28 per cent for those not attending as a direct result of an accident; in most cases the figure was under ten per cent. After working with general practitioners for 20 years in this respect, we now have less than five per cent attending our casualty department who are not genuine casuals. That is, they obviously come there because they have no place else to go, and I think that that's the sort of co-ordination we should aim at between the general practitioner and the casualty department.

As regards prevention, I think we would all agree that if we could immediately have every law and rule of the road enforced, our accident rate would fall away completely. There is no sense whatever in making laws and rules and then failing to enforce them, because it only invites people to break them more. A motor cyclist goes down the village street at 70 miles an hour and no one can ever arrest

him because no police car can be there to go a quarter of a mile behind him to find out what speed he is doing.

Mr Gissane: In answer to the question what overcomes us when we get into a motor car, and why do we behave in that way, it is interesting when one looks at one's hospital beds to find that in the female wards very few people are in there from a road traffic accident; in the male wards over 50 per cent are there from road traffic accidents. I often wonder if it wouldn't be a wise thing if we always went out with a back seat driver.

THE INTEGRATION OF HOSPITAL AND PRACTICE WORK

J. Fry, M.D., F.R.C.S. (*Beckenham*)

In considering the problem of integration I would like to divide it up into three parts: the problem of the practitioner; the problem of the hospital; and the problem of the public. Accidents, as distinct from emergencies (the emergency of the coronary, and so on), account for some ten per cent of the general practitioner's work. We also know that most of them are relatively minor, including the strains, sprains, lacerations, and bruises, though the practitioner will have to refer some 90 per cent of his fractures, if he works in a built-up area. On the other hand, the practitioner will probably deal with more than 90 per cent of the bruises, the lacerations, and the minor sepsis, so it is really a to and fro mechanism. The problems in dealing with these accidents in general practice are not very great. The technical ones, including anaesthesia, operative techniques, sterility, and assistance in carrying out surgical procedures, can usually be overcome by improvisation and adjustment to the situation. The relations with the casualty department include more than trauma, and I think we should also discuss this topic because at the moment these casualty departments do deal with more than trauma, although variations exist from area to area. There is a tendency, certainly in the built-up areas, and this is where most of our population live, for some practitioners to use the department for access to pathological and radiological investigations which they cannot perform themselves, for a second opinion by a much more junior colleague, for admission through the back door of the hospital,