

THE IRISH ARMY QUARTERLY.

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EDITORIAL.

I. *Nos et mutamur.*—The debate of the Second Reading of the Defence Forces (Temporary Provisions) Bill, 1927, was the occasion of an important pronouncement by the Minister for Defence:—

“With regard to the policy, the formation and the character of the Army, our idea, and the type of army that we propose ultimately reaching, is an army composed of three parts—a standing army, a reserve, and a territorial or a militia force. Up to the present the Army has consisted solely of a standing army. Our idea is that that army should be maintained as the framework of a much bigger force, which will include the reserve in the immediate future, and a territorial force in the almost immediate future. The territorial force will consist of men partly or wholly trained; but although we aim at having an army, as I say, in this form, which will consist of a standing army much smaller than the present, a reserve which is just coming into being, and the militia which we hope to bring into being at a later stage, there are certain things which make it impossible for us to go quite as quickly as we would like to go. The standing army should, as soon as possible, become the framework of the whole army, but, as I say, there are certain considerations which make it impossible for us to move on towards that end as quickly as we would like.

“The political situation has prevented that feeling of security which is a normal thing in most countries, and which, I hope, is being very rapidly established here. Owing to the lack of political security it is necessary for the Army to provide guards to a greater extent than would ordinarily be required. The same political causes make it necessary for us to keep in being more military posts throughout the country than would be needed after a long period of political rest. The defence of our coast, maintained by the British under the Treaty, has required, so far, that we should maintain a military post nearby.

“Though undoubtedly those abnormal causes are passing away with commendable rapidity, for some time to come there must remain considerations that will affect the speed with which we move towards the Army organisation I have mentioned. Another thing that will be a temporary stop to our progress towards that end is the fact that various technical corps, such as artillery, air, and other corps, need specialised training which could not be given during the infantryman's period of army service, and, therefore, the period of service in the case of the corps is longer, namely, five years for the colours, and seven for the reserve. That means that the movement of these technical men to the reserve is slower than that of the infantry. The character of the framework which is being formed as a nucleus of our defence forces is modified by this fact and is also affected by the need of maintaining standing troops for the purposes of national defence, and for the purposes of training.”

The leader of the main opposition party agreed in principle with the Army policy as outlined by the Minister, and one may look forward to a relatively rapid organisation of the triple force. The enrolment of reservists has already progressed a considerable distance.

One point of outstanding importance emerged from the debate, viz., that a permanent Act dealing with an Army organisation on the above lines is to materialise—possibly in the coming financial year. This development, with all its implications, is a matter of the greatest possible interest to the present standing Army. A contributor in this number particularises quite a number of problems that present themselves on perusal of the debate.

II. *Economy and Health.*—In this number a contributor deals with the economies effected in Medical Services during the period 1923-1928. The difference in amount between the subheads of the Army Vote allotted to this Service in 1923 and 1928 is £61,073. Economy at the expense of a health service—whether in military or civil life—may be a doubtful saving. If, however, the present instance has been part of an all-round drastic economy—one can only acquiesce. Army Accountancy in the Estimates is linked up with the Office of Minister for Defence, etc. Allowing a generous margin of twenty per cent. of the appropriate subhead to represent the expenses of the Office of the Minister for Defence and the etc., it will be found upon examination that the Cost of Army Accountancy has increased from £25,600 in 1923 to £48,198 in 1927, and this during a period in which the total Army Estimate has dropped from £10,664,500 to £2,183,767, and in which Army strength has been reduced from 50,000 to 11,000. It must be remembered that during the same period experience has raised the administrative capacity of officers and men 100 per cent. Taking all these facts into consideration one feels that as far as Army Finance is concerned, economy should, like charity, begin at home.

III. *Save the Children.*—A subject dealt with in the editorial columns of our last issue was recently brought prominently before the public by a debate in Dail Eireann (November, 1927) which tailed off into a comparison between the relative merits of two different if not rival juvenile organisations. Both organisations, as at present constituted, have this in common that they exclude Irish civics from their curriculum. On hearing the arguments of their partisans one could only pray "A plague on both your houses."

Later in the same month another organisation appeared in public—the Irish Command of the British Fascisti. British Fascists may be all right in their own country—but that country is not Ireland. And why an Irish Command? Is this another organisation for proselytising the spirit of nationality at the proper age? Ireland seems to be fast becoming a happy hunting-ground for all sorts of non-Irish juvenile organisations, and yet the child of to-day will be the citizen of to-morrow. The establishment of an organisation big enough and broad enough to embrace all interests in a common attachment to their common country should not be outside the range of practicability.

IV. *Military Museum.*—The era of struggle that culminated in independence is receding; a correspondent suggests that the opportune moment for consideration of the establishment of a Military Museum is being allowed to recede with it. Presumably the Military College amongst its numerous projected activities will busy itself with the collection of various types of weapons for instruction in the history and evolution of methods of warfare. There are many mementoes of the

struggle in Ireland from Jacobite days to 1921, in the hands of private individuals—Officers and others—which would be available to form a suitable collection of relatively modern remains possessing a sentimental value if proper custody were assured. Specimens of archaeological interest are already thoroughly catered for in the National Museum—but no doubt many such relics still in private hands would be forthcoming for the equipment of a military institution.



SOME FEATURES OF OUR DEFENCE PROBLEM.

By COLONEL COSTELLO.

THE issue of AN t-ÓGLACH in its new form as a quarterly review is particularly welcome in view of the increasing interest in the problem of National Defence, which manifested itself in Dáil Éireann during the debate on the "Defence Forces (Temporary Provisions) Bill, 1927."* While providing for the advancement of the professional knowledge of our officer personnel (by means of the masterly article on "Sarsfield's Raid," and other matters of particular interest to Officers), it affords, as the Editor says, "an opportunity to the general public of judging the work, progress, and evolution of the army . . . from within." Ours being the army of a democratic state, it is particularly desirable that the general public, and the legislators who control our destinies in the name of the public, be informed on the ramifications of the problem entrusted to the Department of Defence. It is, therefore, to be hoped that the thought-provoking and timely observations in the October issue entitled: "Why we Need a Defence Force," will be followed by similar treatment of other aspects of our problem. The views of those, whose duty and occupation concern them with National Defence, cannot be without interest to the legislative bodies responsible for the formulation of policy. The propagation of fuller information will undoubtedly result in a more enlightened public opinion, and therefore, in a fuller sympathy with the task of the Government and its servant, the Army, in providing for National security. In the hope that an examination in detail of some of these problems of the day may appear regularly in AN t-ÓGLACH, I submit to its readers a statement of some matters which appear worthy of study. Perhaps we may see in its columns a treatment of these, and similar matters, in future issues.

OUR DEFENCE POLICY.

An excellent beginning has been made as far as the public discussion of this question by Officers is concerned.† There is room for extensive study and expression of opinion before the matter can be exhausted.

"War is the ultimate resort of Policy," according to British Field Service Regulations. With such fundamental differences of opinion as now exist in Ireland on National Policy, the preparation for war, which is the peace-time function of the army, is bound to be hampered. As is well known, the day of the professional army has passed away, as far as war in the defence of a nation is concerned. War is now the conflict of peoples in every sphere of activity. Without a united and coherent public opinion on the matter of the defence of Ireland, can the nation be organised for its defence, and to what degree? Can we have a consideration of the relative rôles of Finance, Industry, Commerce, Foreign Policy, Education, etc., in the defence of the State?

The census of production now being taken by the Department of Industry and

†"An tOglach," Oct., 1927, "Why we need a Defence Force," by Comdt. D. Bryan.

*See Dáil Debates, 16th Nov., '27.

Commerce, the records of our import and export trade, and the vital statistics of the State, are susceptible of much profitable study and exposition as decisive factors in any war.

How can we finance a war?

Apart from Treaty obligation and constitutional status, does not the fact that a considerable portion of this Island is not under the jurisdiction of the Saorstat Parliament profoundly affect our defence policy? Is it not, in fact, the cardinal feature of the situation which confronts us in considering the matter?

We have no navy. We have no mercantile marine worth talking about. Here, again, we find our avenues of approach to a solution of the problem of defence reduced in number.

The Government of the day has expressed the opinion that we shall not have to fight England under any circumstances reasonably conceivable.† The Fianna Fail Party maintains that England is our most likely enemy. A not inconsiderable body of opinion in An Saorstat regards the British Army and Navy as the national defence forces of the country. These are, in fact, the forces responsible for the protection of the north-eastern counties. The enshrinement of a National Defence Policy in the minds of citizens of all parties is a matter for political action. The tenor of the debate in "An Dail" already referred to is hopeful in spite of the apparent clashes of views, but a long road must be travelled before Ireland's national security is the common concern of all citizens, and her defence a subject on which there is the practical unanimity of opinion which existed in 1920, and which, as in other countries, transcends the most violent political differences. As a means to this end, let us have in AN t-ÓGLACH candid discussion of the problem, and the various factors affecting its solution.

THE PROBLEM OF NEUTRALITY.

We have it on the authority of the leaders of Fianna Fail and the Parliamentary Labour Party that we should endeavour to preserve our neutrality in the event of war.§ This policy, as pointed out in the October number of AN t-ÓGLACH, is not by any means simple. Considered in the light of facts mentioned above, it appears worthy of further study, and might profitably be the subject of many articles from Officers who examine the issues and factors involved. The difficulties of the United States in preserving her neutrality during the World War were numerous: they afford an excellent basis for the study of the question of neutrality.

OUR DOCTRINE OF WAR.

A very great issue was raised by the leader of the opposition in the debate in "An Dail" of the 16th November on "The Defence Forces (Temporary Provisions) Bill." He said: "If we are going to defend ourselves against any power we can only do it in the way we did before, and that is, not by a standing army of this particular normal type, but by a force which will make it impossible for that foreign power to rule in the country, or make it very expensive for them at any rate!" This is undoubtedly a statement on which the views of those whose business it is to study war should be heard. Without question, the Army

†Minister for Defence in "An Dáil," 16th Nov., 1927.

§Dáil Debates, 16th Nov., 1927.

will continue to be the willing and obedient servant of the people's government, and will not "reason why" in respect of any policy the sovereign people pursue. It is well, however, in so far as is consistent with the high standard of discipline which we all desire to see maintained, that we examine the various views on Defence propounded by responsible leaders in the National Assembly in the light of our specialist studies, and duties, and of our own experience whatever it has been. To dispose of the view of the Deputy just quoted without going into the matter with the care, and to a length, which such a comprehensive statement by a responsible public representative demands, would be unjust. Perhaps we can have the question which he raises dealt with at length. He enunciates a doctrine of War which, on the surface at least, appears to involve the abandonment of our country to the hypothetical invader, instead of resistance to invasion. Is it easier to prevent an invader from conquering our country than to prevent him from ruling? Can it be made more expensive for him to conquer it than it would be for him to maintain his rule, or *vice versa*?

If an invader gets to the stage in the conquest of Ireland where he can proceed to establish his rule, or endeavour to do so, how much force will we have available to interfere with him at all, and what will be left of the country economically? Must we wait for a disappearance of the immediate consequences of conquest in devastation and financial loss, and bring up a new generation of insurgents, or perhaps several successive ones? To do as we did before, conditions should be as they were before.

Consider the Boer War and the lesson it has for us. Does the history of that campaign support the theory under notice? Consider the recent war in Morocco. It is surely worth while to review events there and see their application to our situation. Perhaps the facts in both cases may be adduced as arguments to support the Fianna Fail policy of defence. Let us have them anyway. The lesson of the Dardanelles should not be lost on us, and a study of the whole affair would surely enlighten us a great deal. Finally, in this regard, will not someone examine the history of what the Deputy refers to as the way "*we did defend ourselves before*," with a view to a clear understanding of the value of any defence force should we be in a similar predicament again?

Another Opposition Deputy, in the debate just quoted from, raised the matter of the source of our war material, and said, in effect, that he did not see how we could fire cash from a rifle. It would be valuable to know what cash we would have, and where it would come from, if we have to face a situation of the kind, and in the manner visualized by his leader. If it appears that, under such circumstances, we would have cash at our disposal, the problem of converting it into the necessary war material certainly arises. It is one on which we should hear something.

THE RESERVE.

Leaving the larger matters of National policy, responsibility for which, as has been said, rests absolutely with our legislative bodies, we can deal more satisfactorily with matters which arise no matter what the purpose of the Army is, and in which our Officers have a greater degree of responsibility.

Last April it was announced that the Government had in view the creation of a militia.*

The Minister for Defence stated in the Dail† that he intends providing for a Standing Army, a Reserve, and a Territorial Force, thus elaborating this policy. The Fianna Fail and Labour parties through their spokesmen, signified their agreement in principle (in itself very gratifying). The Standing Army is to be small, and Switzerland was quoted and accepted as a State whose example we might follow in the matter of the proportion of Regulars to Territorials or Militia.

One matter stands out as being of particular interest from the professional point of view. The Standing Army will presumably have the task of training the non-permanent force. It will be, in effect, an instructional corps. Its personnel must, therefore, attain a high degree of efficiency. This can only be done over an extended period of years. As stated by the leader of the Opposition, it would of necessity consist, in the main, of specialists. Its numbers, we are told, will be small. With such a small force having the required long term enlistments, what is the possible strength of the reserve? In any event, what is to be its function in contra-distinction to that of the territorials?

If the reserve is to be composed of men transferred from the standing portion of the army, a continual turn-over of the greater part of such a small force will be essential if any appreciable number of men are to become reservists. What will be the duration of the regular service of the average reservist? Will units of all arms of the Regulars be maintained at sufficient strength to admit of his training, and if so, will the same Regulars be able to detach the number of instructors for the territorials, semi-permanent specialists, and administrative personnel required to keep the whole machine going?

In England a reserve is possible as well as a territorial army, because of the large standing army maintained to provide overseas' garrisons and a ready-for-service expeditionary force.

In Switzerland, which is quoted as a country whose example we might follow in the proportion of the regulars to the whole, the regulars are all instructors, staff, administrators, specialists or permanent fortress and frontier guards. There is no regular reserve. The entire military forces constitute the militia of the Confederation. The Regulars, if the term may be applied to those on whole-time service, are trained to a high degree. They are permanent. They have a career in the army, and when they do leave, if they are still fit for service, their training and experience are availed of in the non-permanent militia.

An exactly similar policy is pursued in Canada, where a soldier of the permanent force, when trained, is valued in proportion, as he is available to help in the training of others, and is therefore continued in the service as long as possible.

PROCUREMENT OF MEN.

An exposition of the factors affecting the procurement of Non-Commissioned Officers and men would be of value. Assuming that only a very small proportion of our forces will be maintained on a whole-time basis, how can the service be made sufficiently attractive to ensure our obtaining the type of man required? A very high standard must certainly be maintained if the Regular Forces are to discharge the task of training the non-permanent forces. What is the length of

*Dáil Debates, 21st April, 1927, Minister for Finance on the Estimates.

†Dáil Debates, 16th November, 1927.

service considered necessary to train men for the various arms? If these men, when trained, are required to train others, the further period for which they must serve should be considered. At what stage will the man who joins the permanent force return to civil life? What are his prospects of earning a livelihood when he does return, and how do they compare with those of the man of equal capacity and education who does not join the Army? What will be the effect on the State at large of the withdrawal, for a number of years from the community, of the men required, and their discharge from the army at the end of that period? Must the army offer a career to every man who joins the permanent forces? In short, can we ensure that the man who joins the army does not thereby lessen his prospects of earning his livelihood.

Since the army was established there has been great unemployment. With the return to more prosperous conditions which is so greatly desired, can the army compete with civilian employers for the type of man required? The merits and demerits of conscription should be understood. It is a subject upon which we should have little difficulty in obtaining data.

PROCUREMENT OF OFFICERS.

Are the conditions of service in the Army to-day such as to attract the type of man required to make an efficient Officer?

It is universally admitted that the intellectual and other qualities required to make a successful Army Officer are at least of as high an order as those required for any of the other professions. Are the men to whom the lives of hundreds, or thousands of their fellow citizens may be entrusted in battle; the men on whose work in peace and war the safety of the entire nation may depend; those whose skill, judgment and professional attainments would in the catastrophe of war have such a profound and far-reaching influence on the morale of the nation, and on the financial, economic, and social consequences of war; are these men to be regarded in this country as having a lower status than the doctor or the lawyer? In other countries it is not so, and we must hope that, in spite of appearances to the contrary, it will not be so here.

Is the high degree of professional knowledge required of Army Officers fully understood? The financial recompense awarded the soldier is a test. If high attainments in his own sphere are demanded of the Officer, should his remuneration be less than that in other State services? If the possession of a Degree in Law or Medicine raises the value of a man's service in the Army above that of his fellow who devotes his time to the study of the military art, can we avoid the inference that the doctor or the lawyer in the army is regarded as filling a more important place in the scheme of things than the Officer who will lead our men in battle, or he on whose energy, foresight, and intelligence the successful planning of our defence depends? Are we to believe that the combatant Officer or the Staff Officer occupies a lower place than the non-combatant who has another profession? The University Degree in itself is not the factor that determines the inferiority of the fighting man. We have M.A.'s, B.A.'s, and B.Sc.'s in the forces, but they, being combatant Officers, are on the lower plane. We must recognize the fact that Officers will look to the career offered them in the Army. If the study of law brings rewards which the study of war does not, who will study war?

The question is, can we attract the brains needed for the work to the problems of our defence, and to the laying of those traditions in the army which our Minister spoke of in last month's issue, if the attraction in other directions is so much stronger? Remembering the poverty of the country, and the fact that our professional education is not yet far advanced, I still think this question is at least worthy of discussion. Let us have the matter dealt with in AN T-ÓGLACH for the benefit of those concerned.

PROMOTION.

A contributor has dealt ably with one aspect of the conditions of service of our Officer personnel,* to wit, the fact that there is no pension scheme at present. I need not repeat his arguments, but I will commend to the consideration of Officers the bearing of this question on promotion.

He asserts that "the prospect of a pensionless future will not attract the very best type of young men to the Army." My personal experience is, that in spite of the enormous difficulty of getting employment which faces the average young man we would like to see become a cadet, we are not getting him. Why? Let our Officers come forward with such reasons as occur to them. Is the question of promotion a concern of the man joining? Is the same question affecting the morale of the existing Officer personnel? As far as I know, there is a regularized system of promotion in the Army of every civilized country. It is a matter on which we can afford to have some data and suggestions as to the action, if any, desirable in our forces. We have men of a high order of intelligence devoted to duty, making progress at their profession, who are Second Lieutenants since the formation of the Army. They see no clear prospects of promotion even now. With colonels in their twenties, how is the upward movement to take place which will ensure the advancement normal to any service? All our Officers are comparatively young. Are able and valuable men to grow old as lieutenants and captains, side by side with majors and colonels of about equal years? With no pension our senior Officers will naturally be unwilling to leave the service while they can continue as effectives and earn full pay.

I am sure it is a platitude to say that we must have promotion. How, then, will we have it? To render it possible we must provide for the retirement of a proportion of Officers each year from the higher ranks. That promotion should be systematized is hardly necessary to argue. The systems that we could follow afford wide scope for suggestion. There is the system of seniority-cum-efficiency (tested by examination and the manner of performance of duties) as practised in England. There is the system of absolute seniority as followed in the United States, which renders favouritism impossible, and there is the system of promotion by efficiency alone advocated by many Officers, but not adopted by any of the leading military countries, as far as I know. There are, of course, a great many possible variants and combinations. The issue of promotion within each arm of the service as against promotion irrespective of appointment or arm, is still a live one, though the latter system is now more in favour. The nature of the tests to be applied for promotion, and the manner of their application is an open field for discussion.

*See "An t-Oglach," October, 1927, "The Case for Army Pensions," by Col. T. F. Higgins, D.M.S.

ORGANIZATION.

I understand that the question of organization has been under consideration by a board of Officers for some time, and that the results of their labours will be available in the near future. This vast subject is of perpetual interest, and with developments in scientific fields recorded almost daily, it is one on which the accepted views of the day require to be subjected to examination in the light of each new factor appearing.

In view of the foreshadowed establishment of a territorial force and reduction of the Regulars, perhaps someone will discuss the advantages of Regimental organization as understood in the British Army. The value of regimental traditions, and the advantage of having every Officer and man a member of some organization which can embody all that the Regiment embodies as aids to *esprit-de-corps*, could profitably be covered. In the regiment our Officers and men who serve on higher staffs from time to time would have their army home, so to speak. This is a topic full of interest to all of us in the Army.

TRAINING.

The problem of training our forces is vast and many-sided, and lends itself to discussion in the columns of a journal such as this to perhaps a greater degree than any other. I will only refer to a few of the features of it that seem to deserve attention in the manner suggested. The Training Bureau and the other agencies of the Department of Defence concerned are, of course, actively engaged in pursuing solutions for all the difficulties that arise. Perhaps some Officer so engaged would let the general body know what obstacles to progress are most difficult of negotiation and let us have the free play of ideas on them.

TERMINOLOGY.

A minor matter, perhaps, but nevertheless one which would smooth the way of all soldiers to a considerable extent, is the publication of a dictionary of military terms. England, France, and the United States has each a usage of its own in the matter of military terms. We have words borrowed from all, with consequent confusion. Should we adopt the words used by any one of these nations, or should we prepare a dictionary of our own? While there may be no reason why we should not have military terms differing from those of other countries, standardization in our own forces appears necessary. In view of the enormously greater amount of English military literature that is, and will be in use here than that produced at home, would the adoption of British terms, where suitable, be advisable?

We have now in use the following words: Department, Branch, Bureau, Section, Office, as applied to portions of the Department of Defence. Is there not room for definition, and, perhaps, the elimination of some of these terms?

HIGHER MILITARY TRAINING.

Can the question of the cost of the higher military training of our senior Officers be gone into? Even granting the availability of funds, can the facilities for such training be created, and how? In Canada it is held that the facilities for such training could not be duplicated there, and they have their Officers trained in England. The extent to which the same practice is followed by other small countries would be worthy of examination.

TECHNICAL TRAINING: CO-OPERATION WITH CIVILIAN INSTITUTIONS.

We have the aeroplane, the tank, the modern field and heavy gun, gas, radio, telegraphy and telephony, armoured cars, the heavy machine-gun, motorized cross-country transport, and a score of other developments of a technical nature to consider in the making and training of our army. Leaving aside the question of the procurement of this equipment, and of the vast amount of special, elaborate, and complicated munitions and stores required to keep it in the field, we can consider the training of the technical personnel needed.

The great variety of the training required, the amount of material and apparatus needed by the student of aviation, engineering (civil, mechanical, and electrical), chemistry, radio communication, and such Staff concerns as censorship, intelligence, etc., would put a terrific strain on our slim resources. To what degree can we provide for co-operation between the Department of Defence and the educational and professional institutions throughout the country so as to avoid duplication of effort, and to ensure that training which is already being done, and which can be more effectually carried out in the civil life of the community, is done there, rather than in the Army? It will be granted, I am sure, that a University Degree in civil engineering, say, or a Diploma from a reputable school following a course in motor engineering is a definite military qualification. The extent to which Officers' Training Corps could help in this regard is a matter on which we can readily obtain authoritative information.

AVIATION AND WIRELESS.

In considering the question of technical training, the supply of men for the Air Force and the Signal Corps is a matter of transcendent importance. In the fields of Aviation and Wireless there is but little development in civil life, and the example of Canada and other countries where the military forces control all governmental activities of either kind may be worth following. The separation of civil and military aviation involves duplication of organization. To what extent, if any, is this unnecessary, and is money wasted as a result? The development of Civil Aviation is admittedly a prime factor in the defence of our country. We should all be glad to hear more about it than we have to date, and, perhaps the Director of Civil Aviation would contribute to our education in this respect.

The vast subject of wireless communication merits attention from the public as well as army Officers, and I have no doubt that as the Officer Commanding the Signal Corps finds time he will follow up his interesting article on its development* by an examination of the difficulties before us.

RESEARCH.

Bound up with this question of technical training is the important matter of technical research. The remarks just made about duplication of work in education apply with even greater force here. Can we pool our resources in money, material, and brains? Would such action advance us in the development of our national resources, and the furtherance of industrial effort? Consider the mil-

*"An t-Oglach," October, 1927, "A Brief Historical Account of the Development of Wireless," by Major Archer, O.C. Signal Corps.

lions of pounds spent annually on research by the governments of Great Britain and the United States, and by such firms as the General Electric Company. The United States Government avails of the work done at Schenectady in the laboratories of the G.E.C. Is this a headline for us? To what degree can we avail of the results of the great expenditure on research abroad, and are we making the fullest possible use of any opportunity to do so that exists? To revert to the General Electric Company. There are students from, I think, twenty countries at its principal plant participating in the enormous benefits of its research work, and the labours of its highly specialised engineers, chemists, and administrators, but there was not one from Ireland last summer. Could such an institution be availed of to train some of our Signal Corps Officers or Cadets?

The Massachusetts Institute of Technology throws open its doors to students from all over the world. Thirty-seven countries were represented there last summer, but Ireland was not among them. The U.S. Army and Navy have Officer-students there continually. An institution with an annual revenue comparable with the expenditure on the Army in An Saorstat is worth looking into as regards its availability to our technicians.

CHEMICAL WARFARE.

A special word about chemical warfare. Can our resources as a gas-producing country be examined? We have many brilliant chemists. What industrial plant have we that could be adapted to produce gases for war purposes?

SUPPLY.

The vital question of the procurement of material of war can be examined. The statement of our Defence Policy by the Minister for Defence is the guiding factor. What would be the cost of providing adequate equipment for, say, one Infantry Brigade and two Batteries of Artillery? Let us examine the proportion of the total expenditure on the Army in other countries that goes to the purchase of war material. In how far can we supply our needs from sources within the country? Consider the availability or otherwise of supplies from England under various circumstances. If England goes to war, despatches an expeditionary force overseas and mobilizes her territorials, will she turn over to us the war material necessary for the purpose, say, of maintaining armed neutrality, or even for the protection of our own shores against England's enemy? Is it human nature to expect her to give us that for which her generals at the front will undoubtedly be clamouring, as they have been in every war? What does history lead us to expect? What reserves of material and equipment should we maintain? The normal day's fire in active service for an eighteen-pounder is considered to be 300 rounds. How many days' fire per gun should go with it if, and when, it goes into the field?

The matter of supply in the field depends upon our doctrine of war, upon our organization, and, a very important point, upon the requirements of the civil population in the theatre of operations. Let us have an examination of the capacity of our railways and motor transport. Assume that we are cut off entirely by sea, what food and other necessities have we to maintain our population? What distribution of the same is necessary? How much transport would thereby be tied up? What supplies of food are capable of preservation, and

what would go to waste if not used when fresh? It is axiomatic that the supplies for troops must be reduced to the minimum in bulk, and that there must be at least sufficient to sustain life which will be capable of preservation. What tinned stuffs are to be had in Ireland?

POWER.

Power is essential to the maintenance of the forces in the field as well as the continuance of the life of the country. Petrol, coal, electricity, power alcohol, peat and timber, are sources of power. To what extent can our needs be supplied from within our borders? Can our railways and motor transport function to the limit of their capacity without importation of coal and petrol? How much of either will we get if England is in the throes of a struggle like the World War? A contributor has already discussed the matter of electrical supply.* Can the question be developed further?

DRESS.

An Officer speaking to me with reference to the pleasant matter of horse-riding, about which I will not attempt to start any controversy, mentioned that he rode in civilian clothes, because it was more comfortable to do so than in uniform. I agree with him thoroughly. The relief with which I doffed our high-necked tunic, and donned the comfortable American service "shirt" is a vivid recollection. It seems to me that comfort and serviceability are essential qualities of any uniform on field service. In warm weather and on field work, such as tactical training, our clothing becomes unpleasant from accumulation of dust and from perspiration. Could not the design of the existing uniform be altered with consequent increase in the comfort of the soldier and Officer, and thereby add to the powers of endurance of our men? Would a field uniform that could be easily washed be somewhat of an improvement?

What are the views of our Medical Officers on the subject?

16th Dec., 1927.

*"An t-Oglach," October, 1927, "The Shannon Scheme," by Comdt. Comerford, A.C.E.

MECHANISATION.

By MAJOR D. McDONNELL.

SINCE the Great War, the Staffs of most European Armies have been devoting time, thought and money to solving the problems created by the development of the i/c engine. This development has been so rapid that the resulting problems are involved and beset with difficulties—not the least of which is terminology. The Americans talk of Mechanicalisation, while the British use the more compact coined word, Mechanisation. Both interpret the term in the rather narrow sense of providing mechanical transport for troops and supplies on terra firma. It is not inconceivable that at an early date giant planes and airships may have to be included in both interpretations, but be that as it may, it is certain that every country will view the problems in the light of its own necessities, projects and resources.

Without committing oneself to any definition of the term Mechanisation, it may be agreed that any device which secures results hitherto achieved by physical energy, human or animal, without the expenditure or with a reduced expenditure of such energy comes within the meaning of the term.

Some of the advantages of Mechanisation in the narrow sense of the term are:—

- (1) A vast increase in troop mobility and consequent saving in personnel.
- (2) Troops can arrive comparatively fresh after a journey equivalent to a two days' march (foot).
- (3) Restoration of mobility to warfare with renewed opportunity to the strategist of bringing a campaign to an early and successful issue.
- (4) Artillery can be moved vastly greater distances than is possible by horse traction.
- (5) Adequate ammunition supplies can be transported greater distances and in less time.
- (6) With cross-country and armoured cars or dragons, troops can be moved into the thick of action.

On this broad outline one might be tempted to say—Why delay? Why not mechanise at once? The matter is not, however, so simple. First and foremost there are two schools of thought, and each of the advantages claimed will be attacked by the anti-mechanist school. Dangers will be multiplied—exaggerated—and difficulties quoted; indeed the anti-mechanists are already in the field on the principle that “Thrice is he armed who hath his quarrel just, but four times he who gets his blow in first.” The O/C Artillery Corps, in the September issue, makes a strong plea for Horse Traction for Field Artillery. With the fairness of his presentation of the case I have no quarrel. With his conclusions I disagree entirely. The evidence is not strong. A preliminary test on ground of his own selection with a tractor designed for road and agricultural traction, in my opinion, hardly warrants such sweeping conclusions. Ability to ford rivers and cross boggy land must be considered in the light of probable necessity, and a trek to Tralee against time (without rail facilities) would do more than restore the marks lost in a peculiarly difficult cross-country test.

If one succeeds in securing agreement as to the advantages, the question of feasibility arises, and is followed by an endeavour to strike the average as between advantages and disadvantages. Unless one can expand establishments in time of war to war strength, it must be agreed that any project lacks feasibility, and with some years of "estimate" experience I willingly cede the difficulty of convincing the financial powers that be of the advantages of anything new or of the ultimate advantage of anything which cannot be translated into terms of £ s. d., prefixed with a minus sign. However, time brings changes. Reason and common sense on whichever side they lie, generally prevail, and while we appreciate our own difficulties to the full, we may at times be a little forgetful of those of the other fellow. Forgetting for the moment our pet schemes which annually get the "knock," let us review the pros and cons with as near an approach to a judicial frame of mind as is possible.

Mechanisation is not feasible for *Olgaigh na hEireann* because sufficient money is not available, and we have not manufacturing resources. This sounds very formidable, and if we agree, there is no necessity to discuss other difficulties. But we do not agree. Money is available or can be made available when the necessity is made apparent. The most hostile critic of Army expenditure, if he wants an Army at all (and those who don't want an Army should read Comdt. Bryan's article in the October issue*) will not cavil at expenditure which will enable the Army to make up for its limited numbers by the most modern and up-to-date equipment. Nobody likes "shelling out," least of all John Citizen, but if he is satisfied, directly or through his representatives, that expenditure is necessary or advisable and that stores or appliances for which he pays will be used effectively, he is prepared to pay with as little reluctance as he pays his Fire Insurance. We have no manufacturing resources. Comparatively true, but is this difficulty really insurmountable? True, we have Ford's Factory—a not inconsiderable concern—but their range of products hardly fills all Army needs. There is nothing to prevent our acquiring a sufficiency of suitable vehicles without any great capital expenditure and with comparatively small annual expenditure. This can be effected by small annual purchases in replacement of the much-worn vehicles at present in use and by payment of a bounty to commercial users of approved type of vehicle. This bounty might take the form of cash payment and/or reduction of license duty. Acceptance of the bounty would imply proper maintenance and handing over on demand to Army at cost price less an agreed deduction for depreciation on a period and/or mileage basis. But what about Spare Parts? Well, the concessionaire and manufacturer can be induced to carry large stocks, and as there are several first-class works and shops in the *Saorstát* capable of turning out almost any part of a vehicle sufficiently quickly to meet the demand for spares and replacement, an adequate stock of the necessary raw material could be maintained at trifling cost. From the national point of view it is feasible to secure a sufficiency of wheeled vehicles for transport. Now what about armoured cars and tanks, dragons, track and $\frac{1}{2}$ -track vehicles? The position is admittedly not so simple with regard to Armoured Cars. Much can be done by natural ingenuity, and if we

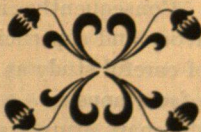
*Why we need a Defence Force, "An t-Oglach," Oct. 1927.

do not achieve the refinement of the A.R.R., we might produce something more deadly. With regard to heavy tanks, the prospects of production are not bright, and it must be admitted that the cost of an appreciable number would be a substantial sum. That the heavy tank can be a useful and deadly instrument in certain circumstances cannot be denied, but it can be seriously questioned if these circumstances exist or are likely to exist in Ireland. Moreover, the term "Heavy Tank" has little practical significance. The latest experimental models are very different to those of a few years ago, and a few more years may bring even greater changes. Moreover, research and experiment may produce an anti-tank device which will relegate tanks and tank production to the Museums. Tankettes, *i.e.*, one and two-men tanks of light weight—manufactured largely from commercial components—are in a different class. Their offensive capacity is not comparable with that of the heavier Tank. On the other hand, in the absence of anti-tank weapons they could perform valuable work as movable machine gun-posts, and in reconnaissance, and even stand a sporting chance on account of their speed and manoeuvre ability of avoiding the anti-tank weapons. Dragons have the vulnerability of the heavy Tanks without their offensive power; they are useful for carrying troops, supplies, ammunition in face of rifle fire and light machine-gun fire, and for towing artillery. Their particular utility to an Army defending the shores of Ireland is not, however, so obvious as to cause them to be classed *prima facie* as necessities.

The Track and $\frac{1}{2}$ -Track Vehicles occupy a mid-way position. They can be exceedingly useful for cross-country—hill and mountain work—can be used on roads, but are slower and more awkward than the wheeled vehicle although capable of carrying a greater load with less damage to the road. There are no good grounds for anticipating the adoption of either type for commercial purposes and their adoption on establishments must be dependent upon the case put up to warrant their cost. As tractors for Artillery they shine by comparison of maintenance costs—save personnel and save time in training of personnel.

It will be agreed that the getting together of an adequate amount of mechanical transport contrivances is feasible, and the critics will say—How about using it after you get it? A few weeks will exhaust the available stock of petrol and oil. An argument deadly enough at first seeming, and yet one which in the light of the Sinn Fein doctrine, clinches the case for mechanisation. When used as a hostile statement the underlying argument is that horses could be foraged day in and day out from the produce of the country. Are they now? In the piping times of peace? And won't the same factors operate to prevent import of foodstuffs as may prevent import of petrol? It will be argued that an enlightened agricultural policy will make provision for adequate home production of foodstuffs. Doubtless! but an enlightened economic policy will make for an increased population which will require the foodstuffs (destined by the anti-mechanist for the horse) and an enlightened agricultural policy will tend to secure a home-produced fuel, *e.g.*, alcohol and lubricating oil either from coal or vegetable. It will be noted that the foodstuffs necessary for feeding horses must be sound and in good condition, but the foodstuffs or vegetable products for production of alcohol can be secured from damaged portions of crops unsuitable for either human or animal consumption.

That power alcohol can be used in I.C. Engines, either raw or diluted with petrol, benzol, etc., has been demonstrated, and I understand that the Senate has offered a prize for the best design of an engine to run on power alcohol. The possibility of developments in electrical traction will be borne in mind. The claims of some inventor to have produced the ideal small-size low-weight high-capacity battery may some day prove to be true. In the meantime, however, thought and study can be devoted to the problems of "Mechanisation" as an aid to defence with the assurance that "Mechanisation" is feasible.



THE MANŒUVRE OF BANTRY BAY.

A STUDY OF THE FRENCH EXPEDITION OF 1796-'97.

By COL. J. J. O'CONNELL, A.S.I.

IN the history of the French Revolutionary Wars the year 1796 is notable by reason of its marking the Return Offensive of the Republic. For three years Revolutionary France—engaged by foreign and domestic enemies—had been occupied with a struggle on all sides—North, South, East and West. Having finally repelled her enemies and pushed them back, she now prepared to drive home her advantages and strike down one or other—or both—of those remaining. These two remaining foes—Austria and England—were the two most formidable and were complementary of each other, one supplying what the other needed most. Yet by 1796 both of them were showing definite signs of exhaustion.

Against these powers, then, the French Directory proceeded in this year of offensives to launch a mighty triple effort embracing the following operations:

- (b) Offensive against Austria in Germany by Moreau and Jourdain.
- (a) Offensive against Austria in Italy by Bonaparte.
- (c) Offensive against England in Ireland by Hoche.

Thus, Hoche's expedition to Ireland was one main component in a mighty strategical combination; and it is as such that the present study proposes to consider it. Up to the present time it has never been regarded in that light—in marked contrast with the other two French Offensives of 1796. The Italian Campaign of 1796 is quite the *most celebrated of all campaigns*: the history of 1796 in Germany is also unusually well known.

The Irish enterprise, on the contrary, has invariably been regarded, either, on the one hand, as a side-issue of the Revolutionary Wars generally, or as a side-issue in the history of 1798. Consequently, instead of complete and careful analysis it has received only cursory and superficial mention. In reality, Hoche's offensive is quite as deserving of careful study as any other operation of that time, as will be realised when all the facts appear.

For one thing, Hoche's expeditionary army was numerically the largest French force that had crossed the sea since the Crusades—*i.e.*, since the time of Saint Louis, exactly five and a quarter centuries before. This fact, alone, should suffice to arrest attention. Great military, as distinct from naval, powers, do not commonly employ forces of such dimensions unless for some commensurate object.

Another factor definitely establishing the importance of the Irish expedition was the status of the General in command. At the date of his expedition Hoche would probably have been considered the second in reputation of the French generals; a year earlier, indeed, he would probably have been rated as the first of them. Generals of that status commonly command only enterprises of the first order of importance.

CHAPTER I.—THE GENESIS OF THE ENTERPRISE.

A. THE PRE-DISPOSITION OF HOCHÉ.

The idea of an attack on England was not new to the military direction of Revolutionary France. In one form or another projects had been put forward for an invasion of either England's home territory or of some of her possessions. These projects had been submitted by military and naval officers, and even by civilians:

they embraced every possible form of operation from a full-sized invasion to the organising of guerilla bands. Hoche, of course, had access to all these early projects, for what they were worth; and at all events their perusal was certain to render him familiar with the problem in its general aspects. Indeed, he had himself been among the first to tender a plan:

(Project of Hoche.—Extract from a letter dated 1st Oct., 1793, of General Hoche, to the Committee of Public Safety):—

“ Since the beginning of the campaign I have consistently thought that the proper place to fight the English was in their own territory. Fifty old battalions, along with fifty of the new levy, twelve to fifteen squadrons, three companies of light artillery, forty pieces of position or siege artillery would suffice. Only daring and love of freedom are required to overthrow Pitt. Six months of reflection have satisfied me that the invasion of England is not a chimera. An intrepid man at the head of 40,000 others would cause great havoc in that country, and would soon compel the leagued tyrants to sue for peace. But, someone will say: what about the means of transport? Oh, men of little soul, how long more shall we distrust our strength? Cover the sea with merchantmen armed for war: let these form a bridge from the shores of France to proud Albion. No manoeuvring, no stratagems—only fire and sword and patriotism. If we are attacked en route let us use red-hot shot. . . . ”

Now, granting that this memorandum sounds very optimistic—nothing surprising seeing that Hoche was only twenty-four—the following points should be noted: thus early on Hoche sizes up England as the most formidable of the coalised enemies; he stresses the need for extreme vigour of execution; and he expects the army largely to fight its own way across the sea. All these points we shall see being developed in the sequel—only in a riper and more judicial fashion, according as Hoche himself ripened and became familiar with war on a great scale.

A few weeks before Hoche penned this memorandum he had been instrumental in repulsing the Duke of York's Allied Army before Dunkerque. The attack on Dunkerque had been entirely an English aim: ever since Cromwell's time the English had nursed designs on this celebrated base for cruisers—even securing at one time a clause to be inserted in a treaty prohibiting its fortification. Hoche, as the de facto Governor of the place, thus became focussed on England as a main and traditional enemy. And quite naturally, the fact that his first independent command resulted in a victory over this foe must have definitely influenced his subsequent military development.

This original orientation of Hoche's mind must inevitably have received a powerful impetus from his subsequent service in the West of France—when engaged in suppressing the Royalist insurrections in Brittany and La Vendée, during the years 1794-6. The English Government had been, both directly and indirectly, the mainstay of the Royalist movement in these provinces. In the first place adjacent English territories—Isle of Wight and Channel Islands—had from the first afforded refuge to Emigrés and Royalist agents, and were bases from which they could communicate with their adherents in France without difficulty or delay. Money and arms to sustain the insurgents were also smuggled in through the same channels. Again, the English Navy all through these years maintained—

in addition to a general blockade—a harassing warfare along the coast-line of Hoche's command, from Havre all the way round to La Rochelle: bays and harbours were entered, coastwise shipping was attacked, islands were seized as advanced bases for the English cruisers. Finally, in 1795, two definite attempts at invasion were made by combined Emigrés and English forces—at Quiberon and Ile d'Yeu.

Hoche had been personally occupied in the defeating of these two main expeditions, and had full experience of the worrying effect of the minor enterprises in which he had not been directly engaged. Indeed, all through the General's correspondence there is clearly exhibited his conviction that England was really responsible for the Civil War in Western France, and for the resulting devastation and hatreds in the territories under his charge. He became animated by a strong personal animus which rendered him eager to seize a suitable opportunity of paying off old scores. But his antipathy to England rested on other and broader foundations. He saw in the England of his time an essentially aristocratic and obligarchic state—fundamentally opposed to the Revolution as he understood it. And Hoche—more than any other Frenchman, whether soldier or civilian—embodied all that was good in the Revolution, and nothing that was bad. For him, the principles professed carelessly or even hypocritically by many, were a religion: anything opposed to those principles must be inherently wrong. No other explanation was understandable in his eyes.

Clearly then, Hoche was predisposed against England to a degree that marked him out as the man to be entrusted with command of any offensive operations directed against that power. Some way to strike hard and directly at England would inevitably commend itself to Hoche. As the idea matured in his practical mind we shall see Ireland selected as the theatre—a selection that also made a powerful appeal to the General's strong innate sense of justice and hatred of tyranny in any form.

Moreover, Hoche's two years of campaigning in the West of France had given him an insight into the practical side of English warlike methods. More accurately than any other continental General before or since his time he had penetrated the secret of how to fight the English "du fort au faible." Having been instrumental in foiling three serious English attempts—Dunkerque, Quiberon, and Ile d'Yeu—besides being inconvenienced by many lesser ones—he was well circumstanced to calculate the relatively small strain these efforts had placed on English resources; and the enormous damage they might have accomplished if successful. In effect, his design was to turn England's own measured and amphibious war-methods against herself on a comprehensive scale.

B. EVOLUTION OF THE PROJECT OF AN EXPEDITION.

In preparing the offensive against England, two streams of influence were at work. In the West of France was Hoche, always thinking of the enterprise in his spare moments, and considering ways and means: in Paris was the central Government entrusted with the broad planning of all campaigns on each front. These two streams of influence did not converge until the middle of 1796—which time, accordingly, may be taken as the real starting point.

Although in September, 1794, Hoche—just then appointed to his first command

in the West of France—(Army of the Coasts of Cherbourg)—had issued a proclamation in which he expressed the hope that he would soon be able to turn his arms “against the authors of all the evils which had been inflicted on those regions.” Six months later he submitted to the Committee of Public Safety a proposal for countering the threatened attacks of the Emigrés and English—of which he had warning through some seized correspondence.

This time his proposed measures were detailed thus:—

- (a) Organisation of a gunboat flotilla for coast defence.
- (b) Organisation of a system of mobile detachments.
- (c) Preparation for an attack on the Channel Islands.
- (d) Organisation of guerilla warfare bands in England.

But the occasion never arose for putting this plan into operation. During all the rest of 1795 and the early months of 1796, the hands of Hoche were kept full on land, without any possibility of any enterprise to counter the English efforts.

When he did eventually have time to get to work on an anti-English offensive—as the Civil War in the West finally died out—he inspected the coast towns with the Channel Islands project more or less guiding him. He found some of the flotilla resources assembled two years previously—*i.e.*, before his own term of command—to be still available. But it chanced that an alternative objective had meantime come into being. The St. Marcouf group of small islands, lying some 4 miles off-shore, to the south of Cape Barfleur, had been seized by Sir Sydney Smith in July, 1795 in connection with the Quiberon campaign. They were held as a flotilla base for the purpose of worrying the coasting trade along the coast of Normandy. Hoche made a thorough reconnaissance of these islands with a view to attacking them if possible. It seems pretty clear that this reconnaissance was of no small value towards familiarising him with naval difficulties on the technical side.

The islands, two in number, were some 300 yards apart. In this 300 yd. channel a 40-gun frigate could sail at high water. The islands were difficult of approach on hydrographic grounds, and were garrisoned by 500 marines and sailors with English light craft always in the offing. The islands were strongly entrenched and palisaded, and mounted numerous guns in towers and redoubts which gave three tiers of fire. Hoche pronounced against the projected attack very definitely—and was vindicated when a serious flotilla attack in April, 1798, was heavily defeated.

Hoche, indeed, was learning how elusive a foe England was to an opponent weak at sea—elusive, that is to say as regards a main attack. At the same time he kept constantly casting about for some opening whereby some degree of annoyance and distraction of force could be effected, and it so happened that this fitted in with the ordinary military administration of his Army Command.

Now that the Civil War was over, it was possible to concentrate gradually the forces under Hoche's orders and to sort them out for future employment. In January, 1796, the strength of the Army of the Ocean Coasts numbered 182,956 all told. By April it had dropped to 169,780. The reduction was accounted for

by drafts for the offensive theatres in Italy and Germany—for which Hoche's Army now became the great source of reinforcement.

At the same time Hoche was proceeding with a special "comb-out" of his own. He was forming a "Legion des Francs" or "Free-Corps" from among the hard cases in his army. Of these there were a considerable number—deserters and reconciled Chouan insurgents, brave but indisciplined soldiers. Such men, in the inaction of garrison routine, he feared, might offer bad example to their comrades—Better get them doing something. And, obviously, they could do nothing better than carry out guerilla operations in England. In point of fact, they were all experienced guerilla warriors—and there would be a reasonable prospect of their containing a serious force in England for some time at any rate. Concurrently, a second legion was to be organised from the inmates of convict prisons.

The first of these legions was to establish itself in Cornwall, the second to try and endanger the mining industry in South Wales. The total for the two was to be something like 2,600 or so. In the end, the first force—commanded by Humbert, and with excellent officers—proved very good and formed part of the Bantry Bay army. It was organised in 3 battalions of 30 companies of 50 men each, one company of 36 sharp-shooters, and seventy hussars. The convict battalion was used as a diversion, as will be seen later on.

The matter of organising and arming these forces, of providing supplies for them, and procuring ships to transport them, gradually enabled Hoche to familiarise himself with the technical side of such operations—besides bringing him into close touch with Truguet, the Minister of Marine, and other members of that Department. In short, the ground was becoming familiar in all aspects.

But while Hoche was working away at his own schemes in the West of France, things were beginning to be seen in a new light by the Directory. A succession of Irish envoys were interviewing important people connected with the Government in Paris, with the result that interest was eventually awakened as to the possibilities of Ireland as a theatre for offensive operations against England. It is not necessary to go into the story of these negotiations here—they appear in full in Tone's Diary and other works. For our purpose it is sufficient to state that, as a result of them, it was decided to attempt an offensive operation of much more considerable importance than had previously been thought warrantable. It was decided to approach the matter systematically; and while Hoche was being authorised to go ahead with his guerilla projects, much wider designs were being considered by the Government in Paris.

C. THE PLAN OF TRUGUET.

Truguet, the Minister for Marine and the Directory eventually elaborated a plan of action—of a very ambitious nature. Its final draft was completed by June 19th, and it was handed to Hoche at Montcontour on the 23rd.

"Citizen General, the time has come for the Executive Directory to communicate to you in full certain plans prepared by it, the execution of which is to be superintended principally by yourself. The condition of the region where you command, the desire evinced by most of the Chouan leaders to return to the fold of the Republic, and the confidence you have inspired in the recently rebellious

departments; all contribute to now render possible the plans to which the Directory could formerly direct a merely speculative attention.

Citizen General, it is a question of restoring the liberty, it seeks to a generous people and one ripe for revolution. For many centuries Ireland has groaned under the hated English yoke. The numerous Defenders there are even now secretly arming to free her from it. The hope of help from the French Republic has alone postponed a general insurrection for which the arrival of that aid would be the signal. In order to prepare for that desirable event, the Directory has already sent a trusty secret agent to confer with the principal Defenders, to notify them as to the place of a French landing, and to take the necessary steps to secure the success of the enterprise. To detach Ireland from England, in other words to reduce the latter to the status of a power of the second order, would mean depriving her of most of her preponderance on all the seas.

It would be superfluous to dilate on the advantages accruing to France from the freedom of Ireland: you will be able to appreciate them yourself. It is for you to prepare this great achievement with the calculation and secrecy which alone can ensure its success.

The French Navy, not yet redeemed from the nullity caused by neglect, is not in a condition to provide us simultaneously with sufficient facilities to effect a landing on a considerable scale. We are consequently forced to fraction this expedition in some sort and form three partial expeditions which will unite subsequently and thus effect the object aimed at by us. The following, Citizen General, is what has been decided on in this matter in accordance with the return of available means furnished by the Minister of Marine.

1. The Squadron destined for India will embark—in addition to the Demi-Brigade required to ensure its success there—at least 5,000 good troops to be landed in Ireland in the province of Connaught, in Galway Bay, if possible. These 5,000 will be drawn from the Army of the Ocean Coasts, and you will provide them with sufficient artillery to hold their ground in Ireland until reinforcements arrive. They are to occupy all Connacht except County Leitrim; they will also occupy County Clare down to the mouth of the Shannon. They will bring with them at least 10,000 muskets to arm the inhabitants who will join them. A portion of the clothes taken from the English at Quiberon will be set aside for the inhabitants also. As the Indian squadron sets sail inside a month and a half, not a moment is to be lost in preparing beforehand the 5,000 men to be landed in Ireland. These should have intelligent and upright leaders, levers of discipline, and able to comport themselves with courage and vigour.

2. A second expedition will be prepared at Brest by yourself and the Minister of Marine, with whom you will concert measures. It should be ready before the next 15th Fructidor (1st Sept.). The squadron assigned to it will carry at least 6,000 men also drawn from the Army of the Ocean Coasts, composed of free corps whom you will raise and provide with daring officers drawn from the other corps and inspired with discipline. You will draw them principally from those left available by the new general organisation. A portion of these forces will be destined to form a mounted force, which will procure horses on its arrival in Ireland. You will take the same precaution for a portion of the 5,000 embarked on the

Indian squadron. The Directory will send you some officers who speak English who can be used profitably in this second expedition, which will also land in Galway Bay. As to the composition of the free corps, this can be such as to rid France of a number of dangerous characters; there would be no objection to incorporating into it "ci-devant Chouans dont les intentions paraîtront convenable." The Directory, however, would point out that the free corps cannot be so called until the moment of their embarkation, by reason of provisions in the Constitution.

3. The third expedition will start from Holland at the same time as the second. The General-in-Chief of the Army of the North is charged with furnishing it. It will also consist of 5,000 men—mainly foreign deserters under French officers, some of whom are already formed into regiments. If you can furnish them with 5,000 red jackets taken at Quiberon, forward same to Ostend without delay, and notify General-in-Chief Bournonville, who is unaware of the objective of the expedition. This third expedition is also for Galway Bay.

You will find herewith under the Number 1 a copy of the Proclamation which the French Commander in Ireland will publish at the time of landing, together with a number of Memoirs which will inform you as to the situation in Ireland.

If the resources of the French fleet had enabled the Directory to transport simultaneously to Connacht the 16,000 men destined to secure the liberation of Ireland, it would not have hesitated to ask you to place yourself in person at the head of so glorious an undertaking and one promising such happy results. To-day the Directory confines itself to recommending you to form the Staff of the small Army of Connacht with extreme care. It reserves the question of forwarding you further orders in this respect. It leaves you the greatest freedom as to dispositions to be made, and will seek to procure the funds indispensable for success.

P.S.—The attempts at Chouannerie in Wales and the County of Cornwall are to be regarded as a valuable diversion, likely to contribute powerfully to the success of the main expedition to Ireland."

Hoche by this communication found himself in effect authorised to put forth his utmost resources against England. The time of restriction to guerilla warfare was over; he would now be able to undertake an enterprise personally—and that, too, an enterprise in keeping with his talents and reputation. Moreover, the role of liberating an oppressed people would make a powerful appeal to his magnanimous mind. Finally, Hoche was, so to speak, a "ci-devant Garde-Française": his old regiment had stood alongside Irishmen at the battle of Fontenoy, to which he had alluded in a well-known memorandum. What more fitting than that he in person should repay the assistance received on the earlier occasion?

Evidently the task would be to the liking of Hoche, taking it in a broad sense. At the same time there were manifest defects in its present form—fractioning of forces, dispersion of effort, etc. These he must seek to amend, and the best way to amend them was by appearing in person before the responsible authorities, stating his own case and getting his own views adopted. With this end in view he asked for permission to go personally to Paris to discuss matters. This he did the very day he received the Directory's memorandum—in the following terms:—

"I have the honour to point out to the Directory that matters would move very much more speedily and that very much greater harmony would prevail if

they allowed me to go to Paris for five days as in the month of Nivôse last. . . . I should go to Paris incognito. . . . I am forwarding 10,000 men to Italy. . . . I will undertake to provide 16,000 men for the expedition, or even 20,000. The troops are inured to the type of warfare needed, and can greatly facilitate the insurrection by their method of fighting. I want my own plan to be adopted by the Directory. I should be afraid, otherwise, that desertion, looting, etc., would cause the failure of the expedition. The bad characters can be allotted to England. Humbert and Mascheret will cross with approximately 3,000 men. It will be a pity of whoever comes across them, or rather falls into their hands. I beg of the Directory to have a good map of Ireland sent to me."

On getting authority for the journey to Paris, Hoche reached there at the beginning of July. On the 12th he interviewed Wolfe Tone, and the same day in a conference with Carnot, Truguet, Lacuée and Clarke he secured the alteration of the plan of June 19th in conformity with his own views.

D. HOCHÉ'S AMENDMENT OF THE OFFICIAL PLAN.

The points in the Directory's plan, as supplied to him, to which Hoche took exception were principally:

1. He did not agree to fractioning the Expedition into three equal portions. His view was that the main force should form only a single body, and that a determined effort should be made to procure from the naval authorities sufficient transport for the entire army, at one and the same time.
2. He disapproved of the completely isolated detachment from Holland, the movements of which could not be co-ordinated with the operations of the troops sailing from Brest. To replace this detachment he offered to provide from the Army of the Ocean Coasts additional men to an equivalent strength.
3. He disliked the employment of undisciplined Free Corps in an irresponsible fashion in Ireland. His intention was to use them as advance-guard troops in combination with the rest of the expeditionary army. At the same time he wished to have the projected guerilla enterprise in England directly subordinated to himself in the interests of a unified command, *i.e.*, as a diversion or containing operation.
4. He objected to the Irish campaign as a whole, being in a fashion tacked on as an addendum to a campaign in the Indian Ocean. He wanted it to be organised independently.

As a result of his representations—representations to which his conversations with Tone contributed to an important extent—the Directory conceded him fuller powers. The original diffidence about giving him command in person of a disjointed expedition evidently had to disappear when he in person *asked for that command* and for full powers. The Directory met his views by the following Decree:

" 2nd Thermidor, An. 5

(20th July, 1796).

" The Executive Directory decrees as follows:—

Art. 1.—General Lazare Hoche is nominated General-in-Chief of the army destined to effect the Irish revolution. He will continue in command of that (Army) of the Coasts of the Ocean until the moment of embarking on this expedition.

Art. 2.—He is authorised to take all necessary steps to hasten preparations, to select among the troops forming the Army of the Coasts of the Ocean up to fifteen thousand men to be embarked, and to constitute the Staff from Officers now serving in the Army in question.

Art. 3.—He is also authorised to prepare all instructions for subordinates, and to send from now on, if he thinks necessary, secret agents into the country.

Art. 4.—He can make in case of need suitable requisitions even for matters affecting the fleet, subject to immediate notification to the Minister of that Department and to the Executive Directory.

Art. 5.—General-in-Chief Hoche can similarly give orders to the various forces intended to act against England as those under Generals Humbert and Quantin. These forces will remain under his direction. He will take measures to reinforce them at need in understanding with the General succeeding him in command of the Army of the Coasts of the Ocean."

This was evidently a distinct advance, but it will be noted that the wording of the Decree is somewhat vague. The truth is: the Directory as a body was unequal to rising to the vision of Hoche—while its ablest member, Carnot, disliked him personally. Accordingly, Hoche's expedition, while not impeded, did receive the wholehearted, à outrance support to which it was entitled, and which a more enlightened Government would have accorded.

E. CERTAIN ADVERSE FACTORS—THE NAVAL VIEW.

Factors militating against the prospects of the Irish expedition come under three general headings:

(a) Lack of really adequate backing from the Directory, as we have just seen. For purposes of a military study this may be taken as a fact—the reasons for it are immaterial, and need not here be investigated.

(b) Lateness of initiating in point of time. This was unavoidable—seeing that the Civil War in the West of France was not really finished until the end of June, before which time, of course, no new enterprise could be attempted with troops from that region.

(c) Hostility or indifference on the part of most of the Naval Officers at the head of affairs. This was all along a very potent influence against the expedition, and requires to be examined carefully.

It so happened that when Hoche was elaborating his plans against England, Truguet, the Minister of Marine, and Villaret-Joyeuse, commanding the naval forces in Brest, were preparing an enterprise of their own to the best of their ability with the means at their disposal. This was the "Indian Squadron" mentioned in the Directory's original proposals to Hoche.

Admiral Villaret in this context has received much uncritical, if not wholly unwarrantable, censure. He was a sailor of respectable attainments, and by his capable defence in the Battle of the 1st of June had ensured the arrival of an enormous grain convoy from America and materially contributed to avert a famine in France.

Consequently, he would expect his opinion to be treated with consideration—and he had a quite arguable project of his own. He had served under Suffren in the Indian Ocean fifteen years before and realised the strategic possibilities of

that theatre—not the least of which was the assured training of the crews on the long voyage out. He got plenty of encouragement for this scheme from the Government—especially from Truguet, his own Minister—and hoped to lead a squadron round the Cape once it was fitted out. The equipment of a squadron for India was totally different from that for Ireland—there would be far fewer soldiers on board and far more elaborate installations, *i.e.*, fresh water tanks, spare stores, etc. The two types of preparation would cut across each other: and yet the Directory never, in so many words, cancelled the Indian project.

Villaret, too, was not very fortunate in those officers at Brest who supported his design most strongly—"Five or six Lorient merchants who form Villaret's clique"—as Hoche scathingly called them when asking for Villaret's supersession. It is, of course, a fact that the Republican Government had to recruit some naval officers from the mercantile marine—and natives of Lorient would naturally be strongly in favour of trying to regain the former valuable eastern trade of that port. On the other hand, men like Bruix—a West Indian—and Bedout—a Canadian—were far more favourably disposed to tackle English naval domination in the Atlantic.

But, at all events, it will be clear that a very definite cleavage existed between the two schools, and sad mischief was wrought in the endeavour to please both parties to the dispute by a half-measure. The Directory, in fact, was not at all clear as to what means did exist for fighting England, and delayed far too long in giving supreme Command to one man.

Until the Command was definitely placed in Hoche's hands each of the parties—military and naval—was of the opinion that its own design was the more important. For Hoche the landing in Ireland was the vital thing, for Villaret the Indian Ocean project overshadowed all else. As always, the compromise, instead of solving two problems, broke down utterly. Centralised direction had to be imposed in the person of Hoche—but by that time serious damage had been done.

Even then the Directory showed up badly. When at length—convinced and dragged along by its great General—that body gave him *carte blanche*, no steps were taken to convey the decision tactfully to the Navy. The officers of that Service—who seem to have been doing their best as they understood it—were put in the position of delinquents without any explanation. Inevitably this treatment rankled, and many naval officers remained to the end antagonistic to the Irish enterprise. This ill-will, manifesting itself in half-hearted action, frustrated the campaign at the last.

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THE COST OF THE ARMY MEDICAL SERVICES.

By COL. T. F. HIGGINS, D.M.S.

My excuse for writing an article on this subject (the strength, organisation, and cost of the Army Medical Services) in a journal such as An tÓglách is that a considerable amount of press prominence for some years past has been given to statements to the effect that the cost is excessive or that the numbers of Officers employed is excessive. The criticisms directed against the Army Medical Services were in all cases perfectly honest criticisms, but they were nevertheless the types of criticisms which were least helpful, in so far as they lacked any specific details as to the particulars in which the cost was too high, or any constructive suggestions as to how the work could be done as efficiently at a lower cost. Most critics were content with the statement that the cost was excessive and should be reduced, and left it at that, without saying whether the numbers employed were too high, or the rates of pay too liberal, or whether the alleged excessive cost of the Services was due to over high expenditure on the supply branch.

I will endeavour to explain the position in detail. The cost of the Services is the sum total of the cost of the following :—

- (1) Army Medical Doctors.
- (2) Army Dentists.
- (3) Army Chemists.
- (4) Army Nursing Service.
- (5) Medical Supplies.

The Sub-head of the Army Votes allotted to these Services for the past five years is :—

	Cost of Officers and Nurses.	Cost of Medical Supplies.
1923-24	£80,000	£22,000
1924-25	£61,780	£9,667
1925-26	£45,884	£7,020
1926-27	£42,958	£2,386
1927-28	£38,685	£2,262

The cost of the above Services was, therefore, reduced from £102,000 in 1923-24 to £40,947 in 1927-28. Such a comparison may not be altogether fair as 1923-24

could not be regarded as a normal year. The year 1925-26, however, was a normal year, but since that time up to the year 1927-28 the cost had been reduced from £52,904 to £40,947 or a reduction of £11,957 in £52,904. The cost for the coming year will show a reduction also in spite of the fact that increments in Officers' pay for years of service amount to approximately £3,000. I mention the above figures in order to show that those responsible for the reorganization of the various Services which make up the Army Medical Services are at least as keen on effecting economies as are their critics.

Now to get down to facts and figures. If the cost is too high it must be due to one of three factors:—

- (1) The number of Officers and Nurses is too great for the work.
- (2) The payment given to Officers and Nurses is too high.
- (3) There is wastage or extravagance in medical supplies.

A full investigation of these three factors which together account for the cost is easily carried out.

To take Number (1) first and to investigate the number of doctors, the position is as follows:—

All the Services are worked under one Colonel Director and two Majors, each Commanding a Division—one Commanding the Hospital Division, which branch also includes the Accounts Department, Pensions Department, Medical Supplies, Recruits, Medical Boards, Dental Workshops, Army Nursing Service, and Central Laboratory and Department of Hygiene. The other Major commands the Field Division which consists of the Medical Service in the seven Brigades and Special Services. This Branch also includes Records, Discipline, Training, Promotion and Pay, Inspections, etc.

In the Hospital Division there are two large General Hospitals.—St. Bricin's Hospital, Dublin, and the Curragh Military Hospital, each containing 200 beds; also five other Hospitals each containing approximately 60 beds, viz., Athlone Military Hospital, Cork Military Hospital, Portobello Military Hospital, Curragh Fever Hospital, and the Central Families Hospital at the Curragh, and some smaller hospitals. In this Division there are 16 doctors employed as follows:—

Pensions Board	...	...	...	...	2
Central Laboratory	...	...	...	...	2
St. Bricin's Hospital	...	...	...	...	5
Curragh Hospital, Fever Hospital, and Families Hospital	...	...	...	...	6
					—
				TOTAL	15
					—

Now the only reasonable manner in which the staffs of hospitals can be examined by those who are not intimately acquainted with the work to be done in a hospital is by comparing the staffs with those of other institutions of similar size.

I append the number of professional and non-professional attendants in two large Dublin hospitals and our two large Military Hospitals.

	One civilian Dublin Hospital 300 beds	St. Bricin's Hospital	Civilian Hospital 200 beds	Curragh Hospitals
Whole-time Doctors Resident ...	6	5	4	6
Whole-time Students Resident ...	12	—	6	—
Nursing Staff, including Probationers ...	82	19	69	17
Visiting Doctors ...	15	3	16	—
Administrative Staff ...	2	*—	2	*—
Dentists and Chemists ...	2	2	3	2
Attendants ...	80	44	23	40

*Administrative work is done by the medical staff, chiefly by the Officer Commanding. When one considers the volume of work done by resident students in our Dublin Hospitals and the vast amount of work which is done daily by the hard-working visiting staffs of Dublin Hospitals, I think it is fairly clear that a resident staff in our Military Hospitals equal to that in civilian hospitals of approximately equal size, is not excessive, when one considers that we have neither resident students or visiting specialists, and that the hospitals are administered by the Commanding Officers.

In the Field Division there are 24 doctors employed as follows:—

Brigade Medical Officers ...	7
Special Service Medical Officers ...	3
Battalion Medical Officers ...	14

The Brigade Medical Officer in addition to his duties, supervisory and administrative, acts as Medical Officer to the Brigade Hospital, instructs, trains, and organises the Medical Unit, and must take over medical charge of a Battalion in the absence of the Battalion Medical Officer on leave, illness, etc.

It is impossible to get a civilian parallel for this service, nor is it possible to enumerate the multiplicity of duties. It must be remembered that the smallest part and the easiest part of the work of a Medical Officer with troops is that of treating the sick and wounded. His main work is the prevention of disease. Every soldier must be vaccinated and inoculated against various diseases, prophylactic measures must be adopted against various illnesses. Each soldier must be inspected weekly to ensure early diagnoses of infectious diseases; the medical history of each soldier

in the Medical Officer's unit must be kept absolutely up to date. Members of the Army Medical Corps must be trained and supervised and all posts held by his Unit must be inspected weekly and the Sanitary Diary kept up to date. The Battalion Medical Officer starts his normal day's work with morning sick parade at 7.15 a.m. and after that he has a full and busy day.

There is a Dentist to each Brigade and one employed in the Dental Workshops. When one considers that an Officer is entitled to one month's leave per annum and that, excluding illness, in order to give each of 40 Officers their annual leave it means three absent each month, it is difficult to see where an Officer could be withdrawn at the moment, but it will be possible with the evacuation of posts and the consequent concentration of troops. At present there is roughly one Medical Officer to every 500; in large concentrations a Medical Officer can take full medical charge of 800.

Having dealt with the numbers employed and their distribution, the next point is the payment given to Officers and the next question is—is it too high? The rates of pay for doctors are as follows:

Lieutenants	£1	per day (middle rate)
Captains	£1 10s.	„ „ (middle rate)
Commandants	£2	„ „ (middle rate) twice Lieutenant's rate.
Majors	£2 14s.	„ „
Colonel (Director)	£3 16s.	„ „

If any one maintains that a whole-time doctor with the rank of Lieutenant with hard and continuous work and subjected to constant discipline is overpaid at £1 per day in a whole-time appointment, that person has a very low opinion of the profession. If this is a reasonable rate for a Lieutenant then the man who earns promotion and is senior to three, four or five Lieutenants with the rank of Captain is scarcely paid sufficient with £1 10s. per day and so on. The Commandant who has earned promotion and has under him two or three Captains and ten or twelve Lieutenants is not too highly paid. The same argument applies to the higher Officers, and it must be remembered that with each promotion the volume of responsibility is more than doubled.

A Major who has control of twenty doctors would not be regarded as overpaid at £1,000 per annum if he held a similar position of control in civil life.

The Salary of the D.M.S.—£1,400 per annum—will not be considered excessive in a civil position entailing the responsibility of control of so many Doctors, Dentists, Chemists and Nurses. In fact £2,000 per annum will be a closer approximation to the rates that obtain where comparison can be instituted.

Another aspect of this matter is the type of doctors we have in the Service. There are 45 doctors, and amongst them there are eight with the Diploma in Public Health, one Doctor of Medicine, and one Master of Arts. In addition through their academic courses eleven first class honours, twenty-five second class honours, and twenty-nine exhibitions and prizes were obtained.

If, as happens only too frequently, these men offer their wares in the civilian market, or become candidates for other State Services, they immediately better their financial position, and there are no criticisms to the effect that they are too highly paid. Here as elsewhere the proof of the pudding is in the eating, and one of the difficulties in the Service is to keep the good men there. There have been more than thirty-five resignations in three years, the higher percentage being from the senior ranks, and if the payment in the Service was more than a man could earn outside it this would not be the case.

Another factor which may help to demonstrate the fact that Officers holding positions are well qualified to do so, is the fact that neither demobilisations nor promotions have been haphazard or influenced by favouritism or prejudice. When it was necessary to demobilise a number of Officers—all sat for an examination and those at the end equal to the number required to be demobilised were demobilised. A small margin of marks was credited to each Officer in proportion to the length of his service. An indication that experience, etc., counts for promotion is the fact that professionally the Director is the grandfather of the profession within the Army, and the Senior Officers may be regarded as the professional fathers of those serving under them. Moreover, five D.P.Hs., one M.D. and a number of exhibitions, etc., are to the credit of the eight senior Officers in the Service.

If any one is desirous of picking holes in the present organization the statement that one Medical Officer should look after 800 troops is misplaced criticism when directed against the Medical Service. We admit that one Medical Officer can take professional charge of 800 men, but the Battalion is the mobile fighting unit and each Battalion must have a Medical Officer. If three Battalions were rolled into two then the number of Medical Officers could be reduced. However, the Medical Service does not organize the Army and those responsible for Army Organisation designed the type of machine best suited to conditions. There is one weakness very apparent in the present Medical Organization and it originates in motives of financial economy; if the Brigade goes into action, on manoeuvres, or leaves an area, two things happen—(1) the District Hospital is left without a Medical Officer as the Brigade M.O. must move with the Brigade Staff and (2) the Medical Service in the Brigade has not the personnel necessary to staff even a small hospital.

The next point is the cost of medical supplies. The cost of medical supplies has been reduced from 10s. per soldier per annum to 3s. 6d. per soldier per annum. This is the lowest peace-time capitation rate for medical supplies in any European Army.

There is only one other point that requires attention, the suggestion that a cheaper type of medical attendance on troops could be designed on the system that obtains with a police force—viz. the attendance of civilian medical practitioners at a capitation rate of 2s. per man per month. Whether this system would be the cheaper or not is a very open question, but there can be no question as to which system is the more efficient from a military standpoint. It must be remembered that under this system no hospital treatment is afforded. It would be rather near the mark to say that such a type of service would do the sick parades which the existing service does at 7.15 a.m., and which I have already pointed out is the smallest part

of the work. However, some people only think in terms of Pounds, Shillings, and Pence, so for their information it is necessary to examine the relative cash cost of the alternative machines.

A Lieutenant Medical Officer at present takes medical charge of 500 troops. His pay is £30 per month. His rations cost 1s. 7d. per day or £2 7s. per month. His travelling costs £6 per month. His total cost to the State per month is £38 7s. The alternative system would cost £50 per month at the police rate of payment and a rather involved system of accountancy would be required.

Moreover, the unit would move without a doctor, and if military operations of any kind were to be undertaken, a doctor with no military knowledge or training would require to be recruited for service.

A close study of the above mentioned points may convince a reader that to criticise is easier than to organise. Further, it is a simple matter to stir up a spirit of carping criticism but it would be more healthy and more helpful to foster a spirit of confidence in those who have responsibilities, remembering that inside every big machine there is an elaborate system of controls. The Battalion expenditure is examined by the Brigade; this in turn is scrutinized by Corps Headquarters, and in due course the expenditure is investigated by the Adjutant General's Branch and General Staff before it is passed to the Minister, from whom it passes to the Ministry of Finance, and later to the Oireachtas, and last of all expenditure is examined and, through existing democratic institutions, controlled by the mass of the people.

Once more, we attempt to put the world into a walnut-shell, as Sancho Panza might say. To-day every mind turns from retrospect to prospect with the old sense of pleasurable uncertainty and chiefly with the "hope eternal." Even in delusion, it is the happiest gift of man, and in the main his best, as the real key of effort and fulfilment. When pessimism becomes a mechanical mood because blood runs thin; when experience has turned to disenchantment; when vision fails and dreams are dead because life has run the longer part of its course and known more of the common lot—this is a weak spectacle always familiar amongst the seniors, and always derisory to the young. Loss of faith is loss of interest, loss of energy, and loss of courage. In this, as in every other respect, men and women must choose between one thing and another. While knowledge of the future is withheld from mortal nature, and a choice must lie at every moment between hope and fear, see to it that the former has the benefit of the doubt and resist the contrary habit like the plague.

* * *

At the same time bright expectations in practical life are worthless without thorough work and definite aims. Experience is priceless when we take its instruction without discouragement. In this spirit we seek to apply the lessons of 1927 to the tasks of 1928 and to sift out some morals for the future from the facts of the past.

J. L. GARVIN in *The Observer*. 1/1/1928.

IRISH MILITARY ORGANISATION IN THE SIXTEENTH CENTURY.

By W. F. BUTLER, D.LITT., M.R.I.A.

IN this article I shall endeavour to give some idea of the military resources at the command of the various Irish leaders who, during the sixteenth century, opposed by force of arms the power of the Crown. It is unfortunate that, as far as I know, none of the Irish annalists give any detailed account of the organisation and equipment of the soldiers who followed O'Neill and O'Donnell, or the Geraldines. Such matters are passed over as needing no explanation for contemporaries. Hence, much of our knowledge on these matters comes from incidental, and sometimes conflicting accounts from the English side. I can make no pretence at an exhaustive treatment of the subject; in fact in this, as in so many other aspects of the social history of our country, there is still a very large amount of spade-work to be done.

But from a comparison between what we know of the institutions of Wales and those of Ireland, and from piecing together incidental notices, some of Irish, some of English origin, and from using—though this must be done with caution—some fairly elaborate accounts by English writers of the arms, equipment and general appearance of their Irish enemies, it is possible to establish certain facts. We find in sixteenth century Ireland, as in thirteenth century Wales, a clear distinction between the fighting and the non-fighting classes. The State Papers and other documents contain constant references to the “churls” who did not usually bear arms, but tilled the ground, and who are contrasted with the weaponed men. We know definitely that in Wales the privilege of serving in time of war was confined to the free land-owning class; the “unfree” were shut out from this as from other privileges. I do not know whether the extant Brehon Laws make any definite pronouncement on this point; but it can be established to some extent, at least, by inference. For instance, the armed force which the Irish leaders in the sixteenth century were able to put into the field falls very much below what we would expect from an estimate of the population.

The forces, for instance, of Monaghan, are put at only about 500 or 600 men; Tir Chonaill seems to have been able to muster only about two thousand; yet these numbers cannot possibly represent the total able-bodied males of these counties.

From the Irish annalists then, from casual notices by English writers, and from the analogy of Wales and the Western Islands of Scotland, we can, I think, establish a clear distinction between the free land-owning class who were trained to war, and the dependent semi-servile class who were armed only on exceptional occasions, if at all. The fighting class in sixteenth century Ireland is in turn composed of two sharply divided groups, the general levy or “rising out” of all the able-bodied freemen of a district, and professional hired troops. In Ireland, as in all other European countries after the fall of the Roman Empire, it was the duty of every freeman to defend his country in case of attack. In Saxon England the “threefold necessity,” as it was called, bound every freeman to military service, and to help to build fortifications and bridges.

Under Norman rule we read of William Rufus availing himself of this principle to call his Saxon subjects to arms. He who stayed at home was to be fined and counted a *nothing* or worthless fellow. The survey of the lands of MacCarthy Mór, taken towards the close of the reign of Elizabeth, states that MacCarthy was entitled to "a rising upon a warning given, of all the able men of the country, every man to be furnished with sufficient weapons and three days' victuals, and for every default to be fined a choice cow." The proviso that the men so summoned to the field should come with three days' victuals looks as if, on the expiration of that period, the burden of supporting them fell on the lord who called them to arms.

The Welsh laws lay down that the king or ruling prince could call out the able-bodied men of the country for home service, that is, for defence, as often as he wished, but that he could only call them out for service beyond the country once a year, and then for six weeks only. It appears also that such foreign service had to be paid for by the king; while for home service no pay, as a rule, was due, though sometimes we hear of three days' service only, without pay. Important consequences followed from this; the Welsh military system, and we may judge by analogy, the Irish, too, was primarily intended for home defence. Continuous offensive warfare was impossible.

The feudal system, as it grew up on the Continent, and in England, tended to substitute for the general levy of the freemen the plan of granting land to a man on condition of his rendering military service. The usual period of such service was six weeks. This would not be enough for continuous offensive warfare; but the kings and greater feudal lords endeavoured to remedy this drawback by calling out their vassals, so to speak, by instalments.

This, however, was not an easily workable plan, and so we find another remedy sought, the hiring of a permanent mercenary force.

Now the early Anglo-Norman invaders of Ireland were a band of adventurers, hired, in the first instance, by Dermot MacMurrough. Better armed and better disciplined than the Irish, they soon over-ran a very large part of the island. As they were encamped in a permanently hostile country, the invaders kept themselves constantly on a war-footing, without any technicalities as to the period for which their military service might be due.

The Irish, on the other hand, relied on the old general levy of the fighting men, admirable, in theory, against an invader; but, in practice, of very little use against a foe greatly superior in weapons and discipline, and useless for any long continued service away from home.

So, for a century or more, the invaders prevailed. Then the Irish began to learn their lesson. At the battle of Down, in 1260:

"Fine linen shirts on the race of Conn,
The foreigners one mass of iron."

But, four years later, the Four Masters mention, in connection with the erection of a monastery at Armagh, a certain "MacDomhnaill Gallóglach," and three years after this we hear that Murchadh Mac Suibhne was taken prisoner by one of the O'Conors, who delivered him up to the Earl of Ulster, in whose prison he died. A new element, the hired soldier from the western islands of Scotland, had

appeared in the Irish military system. The names given above, MacDonnell and MacSwiney, are the most important representatives of this new element, which remains prominent down to the close of the 16th century. They were of the mixed blood, half Gaelic, half Norse, which gave to the western islands their Irish name—Innse Gall. Members of these families first appear in Ireland towards the close of the 13th century. As to the cause of their settlement in Ireland we are told, in the case of the MacDonnells, that Aedh O'Connor, son of the King of Connaught, got with his wife, a daughter of MacDonnell of Scotland, eight-score Scottish Gallóglaich as part of her dowry. This was in the year before the battle of Down.

The MacSwineys are said first to have come to Ireland on "a trip of youth's pleasure and amusement" from their home at Castle Suibhne, in Cantire in Scotland, and landed at Fanad, in Tir Chonnail, then the territory of a family called O Breisléin. Frightened by a vision of his wife's, O Breisléin and his people made a treacherous attack on the Scots. Eoin Mac Suibhne, the leader of the excursionists, escaped with most of his followers, after inflicting great slaughter on his treacherous hosts. Some years afterwards, being banished from Scotland, he thought of avenging himself on the O Breisléins, landed in Fanad, routed the inhabitants, seized all the country, and dwelled there ever after. This settlement seems to have been made some time after the outbreak of hostilities between England and Scotland in the days of Edward I. Thenceforward we meet with frequent allusions to the Gall Óglaich, or foreign youths, the name given to the Hebridean soldier settlers. In 1290, we find mention of them in a civil war in Tir Chonnail; and we also read that Robert Bruce, in his Irish expedition, brought many with him.

The introduction of these hired Scots, according to Professor MacNeill, was one of the chief causes in the Irish rally, which led during the fourteenth century to the reconquest by the Gaels of the larger portion of the island. The Irish chiefs found themselves in possession of a permanent disciplined force, which could be used at any time and for any length of time, and so was infinitely superior to the old "rising out" of the freemen.

The characteristic features of this new force were that the Gallóglaich wore armour, were disciplined, and were always on a war footing. Their chief weapon of offence was an axe, which in the 16th century had a handle six feet long. I shall return later on to their drill and pay in that century. Professor MacNeill lays stress on the fact that all the hereditary families of Gallóglaich were of Scottish origin, MacDonnells, MacSwineys, MacSheehys and MacCubes. From the thirteenth to the end of the sixteenth century every officer of Gallowglasses—to use the English name—that he finds mention of, are, with possibly one exception, of the mixed Gaelic and Scandinavian families of Argyle and the Isles. Of the actual rank and file we cannot be so sure; the sixteenth century records often use the word Scot as if synonymous with Gallowglass; and we know that constant recruiting from the Hebrides went on. But it seems unlikely that all the heavy armed mercenaries of the 16th century could have been recruited from families of foreign origin.

This new force appeared first, as is natural, in Ulster. But the newcomers spread all over the island. To take the MacSwineys, the most widely-spread of these families of professional soldiers, I have said that they raided and conquered the peninsula of Fanad, between Lough Swilly and Mulroy Bay, early in the 14th century, or late in the 13th, and, according to the Leabhar Chlainne Suibhne, maintained themselves there in spite of O'Donnell and O'Neill for some time until they were defeated and their chief slain. The survivors took ship to Castle Suibhne, and called on its lord, a kinsman of the fallen leader, to avenge them, both on the King of Scotland who had exiled them, and on the people of Donegal who had expelled them from Fanad. The chief, Murchadh, "the Crazy," from whom all the later MacSwineys trace their descent, "collected a great splendid fleet, and he and his followers launched their immense capacious ships, and their long surpassing-swift galleys, and their beautiful easily-managed boats, on the surface of the expansive deep, and on the high storm-swept sea, and on the blue, horizontal, limitless abyss. They rowed with might and main, and they rested not until they reached the calm beautiful haven of Swilly. They sent out scouting parties in all the districts on every side of them, and they slew their kings and princes and lords, so that their nobles all perished, and their hostages were taken by Murchadh Mear and his son, Murchadh Og." We are then told of the lands they conquered: "And on these lands he distributed his family and his people, and they have occupied ever since all that conquest, save only the middle third of Inis Eoghain." This forcible settlement, which took place some time about the date of the battle of Bannockburn (1314 A.D.), does not seem, at first sight, to have tended to the advantage of the native Gael of Ulster. The invaders had simply seized what they could by the strong hand, and they hired themselves out to any lord who might require their services. Neither O'Donnell, nor anyone else, at first had any claim on them, but they might serve whomsoever they wished. This we are told was the Scottish habit.

But some sixty years or more after the settlement of Murchadh Mear, the reigning O'Donnell, Toirrdhealbhadh an Fhiona, made an agreement with Toirrdhealbhadh Caoch, then chief of the MacSwineys. "After that he bestowed on them six scores of axes of *buannacht bona* out of Tir Chonaill itself, a gift in perpetuity from himself and his posterity after him; the making of a circuit of Tir Chonaill once in the year; the spending of three nights in each house in Tir Chonaill; the fishing of the Erne every Friday between Patrick's Day and the Feast of the Cross in Harvest, if they should happen to be encamped by the Erne, to oppose the men of Connacht; two Ballybetaghs of Tir MacCaorthainn, which are now called Bráighid Fánad; and to sit by the right side of O Domhnaill whenever MacSuibhne would visit him."

In return for these privileges Clann Suibhne was to supply two Galloglasses for each quarter of land, and two cows for each Galloglass deficient, that is, one cow for the man and one for his equipment. The result of these transactions was to bind the Clann Suibhne to the service of O Domhnaill. Previous to this arrangement no lord had a claim on them for a rising-out or a hosting, but they might serve whomsoever they wished.

Wethus get a view of the conditions on which these families of hereditary sol-

diers served the Irish lords. In the sixteenth century the Clann Suibhne in Tír Chonaill were divided into three septs: MacSuibhne of Fanad, who was bound to supply 120 Galloglass with armour to O Domhnaill; MacSuibhne na dTuath, who had to supply the same number, and MacSuibhne Baghuineach, who was liable for sixty.

The Clann Suibhne spread far beyond the limits of Tír Chonaill. One branch were constables to O'Connor Sligo; another settled in the Plains of Connacht under O'Connor Donn, another took service under O'Brien of Thomond. And the Anglo-Norman families were not slow in imitating the Gaelic lords, and taking into their service families of hereditary Galloglasses. The Clanricard Burkes, and the Butlers both employed MacSwineys; the Earls of Desmond secured the services of the MacSithigh family, a branch of the MacDonnells, whose descendants, the Sheehys, are still numerous in Co. Limerick; seven branches of the MacDonnells are found in the 16th century under MacWilliam of Mayo. The Crown itself entered into an arrangement with some of the MacDonnells. In Elizabeth's reign Her Highness' Galloglasses were settled in Leix, where the castle of Tinnakilly was the residence of their captain.

It was, however, only in Tír Chonaill that these Scottish mercenaries are found in possession of great tracts of land as territorial lords. There they held nearly a fourth of the territory subject to O Domhnaill. But the branch of Clann Suibhne which was brought into Muskerry by Cormac Laidher MacCarthy late in the fifteenth century, were given only a "quarter" of land—the normal quarter had three ploughlands in Muskerry—and a certain rent of meat and money upon every ploughland in the country; while those employed by MacCarthy Reagh, in Carbery, had no lands given them, but were supported by contributions from the land-owners of Carbery. MacCarthy Mór also employed Clann Suibhne. After the death of the last MacCarthy Mór, one of the leaders of the Muskerry branch acquired by purchase the castle of Mashanaglass which MacCarthy Mór had retained in his own hands to give him a hold over Muskerry, and another purchased Cloghda. To those interested in the subject, Father Paul Walsh's edition of *Leabhar Chlainne Suibhne*, to which I am indebted for much of the foregoing, can be warmly recommended.

I have dealt at such length with the fortunes of the Clann Suibhne because their history illustrates the spread all over Ireland of the hereditary soldiers of Scottish origin whose existence forms the most striking feature in the military organisation of sixteenth century Ireland. I shall now endeavour to deal with the actual details of that organisation.

First, then, is to be noted the division of the population into two classes—the fighting and the non-fighting. In a description of the Western Islands of Scotland, written towards the end of the 16th century, it is stated that no labourers of the ground were permitted to go to war, but only "gentlemen quhilk labouris not"; and we are on pretty safe ground in assuming that the institutions of Gaelic Ireland and of Gaelic Scotland were on the whole similar.

Then the fighting class fell into two categories—the rising out or general levy of all those entitled to bear arms, and the professional soldiers. These last again fall into two sub-divisions, the Galloglasses, of Scottish Hebridean origin, and

native Irish professional soldiers. For, as Professor MacNeill points out, the Gaelic lords, about a century after the first appearance of the Scots as mercenaries, began to maintain permanent forces of Irish descent. These were known as *buannadha*, anglicised as "buonies," and are frequently referred to in our records. We have, from the pen of St. Leger, Lord Deputy in the later years of Henry VIII., a description of the kind of fighting men which Ireland could supply. It is not likely that a servant of that monarch would venture to give an inaccurate account. He speaks of horsemen, Galloglasses, and kerne. An earlier account of Ireland, compiled for the king about 1515, speaks of the forces at the command of the sixty Chief Captains of the Gaelic race, who between them ruled about two-thirds of the island as divided into spears, Galloglasses and kerne, and states the forces of the greater Lords as not more than 500 "sperys," 500 Galloglasses, and 1,000 kerne, besides the "comyn folke."

It is not very clear whether by spears are meant horsemen only, or whether footmen, armed with the pike, are distinguished from the galloglasses, whose weapon was the axe. At a later period—about 1570—we hear both of pikemen and shot. St. Leger's description is worth quoting.

"The horseman hath his horse and his two boys and two hackneys, or one hackney and two chief horses." "I think for their feat of war which is for light scourers, there are no properer horsemen in Christian ground, nor more hardy, nor yet that can better endure hardness." "And as to their footmen, they have one sort which be harnessed in mail and bassenettes having every one of them his weapon, called a sparre" (old Norse *spærtha*, meaning a battle axe) "much like the axe of the Tower, and they be named Gallowglass; and for the more part their boys bear for them three darts apiece, which darts they throw, or " (before) "they come to the hand strife; these sort of men be those that do not lightly abandon the field, but bide the brunt to the death. The other sort, called kerne are naked men, but only their shirts and small coats, and many times when they come to the bicker, but bare naked, saving their shirts and these have darts and short bows; which sort of people be both hardy and delyver " (active) "to search woods or morasses, in the which they are hard to be beaten."

We can expand this picture from other accounts, and from some contemporary drawings. The horsemen would be normally the richer men, sons or brothers of the ruling chiefs, or heads of kindreds. In Tipperary the sons of a landed gentleman are styled, in several of the Fiantes, "horsemen" during their father's life.

From a picture in Derrick's Image of Ireland, the horsemen appear to be clothed in mail much the same as the English horsemen in the same picture, and to be drawn up in disciplined squadrons. The points in which they most differed from the English horsemen were that they rode without stirrups, and held their lances above their heads instead of holding them in rest under the arm as was the English fashion. Spenser draws attention to the long hose, the riding shoes of costly Cordovan leather, the hacqueton or sleeveless jacket of plate, and the habergeon or chain mail protecting head and neck, and the jack of quilted and gilded leather.

The Galloglass had a long shirt of mail reaching down to the calf of his leg, as we may see from some still surviving effigies on tombs. Their axe was six feet

long "the stroke whereof is deadly where it lighted." According to Dymmok, they chose "rather to die than to yield," according to Spenser they were "very great scornors of death." They were formed in companies called "battles." Some authorities say that eighty sparres or axes made a battle. Others give a smaller number. We shall see that the Earl of Desmond had units of ninety-six or forty-eight.

To each mailed Galloglass there was attached a man as armour-bearer, and a "boy" (possibly in the modern Irish sense of boy), to carry his provisions. So that, to each Galloglass, or sparre, or axe mentioned in our records as being maintained by the chiefs, we have to add two attendants.

Another salient feature of the Galloglass institution was that, when not on active service, they were quartered on the country. As I have already said, outside Tir Chonaill, the hereditary Galloglass families acquired little or no lands, they were supported by contributions from the country. And it appears that they were commonly "quartered" upon the inhabitants, *i.e.*, put to live in the houses of the subjects of the chief. These had to supply provisions of which the value and amount were in theory fixed, so much butter, milk, meal being provided as well as flesh meat. It can easily be seen how this practise might be abused.

The expense of these Galloglasses, however, acted as a check on the number kept by the chiefs. This we shall see in some of the lists which I shall give presently. One of the O'Donnells was famed for his "strong small-powerful force," a body of sixty horse and two hundred and forty Galloglasses, kept constantly ready for service.

The greater lords quartered some of the Gallowglasses whom they maintained on the lesser chiefs dependent on them. Two lists assign 160 axes to MacCarthy Mór and 80 to MacDonough MacCarthy of Duhallow. We are told by Herbert that Duhallow had to "find," *i.e.*, support, 27 Galloglasses for MacCarthy Mór; and from various Inquisitions we learn that MacDonough had out of O'Callaghan's country the meat, drink and wages for 27 Galloglasses with their boys—perhaps the whole quota due to MacCarthy Mór—as well as the cost of others from the O'Keefes.

As to MacCarthy Mór himself, though official lists assign to him only 160 Galloglasses, yet Sir William Herbert, in an account of his resources, written about 1588, declares that eight of the fourteen districts subject to him had between them to support 258 Galloglasses for him during the year. From a document which I shall mention later on, we find that kerne were also to be supported for him.

As to the wages paid to the Galloglass the State Papers differ so much as to be of little value. Probably all through the century there was a steady increase in what a hired soldier cost. A document emanating from Hugh O'Neill gives details of what he paid to his troops, but by his time, as we shall see, a different organisation had been introduced. The editor of Dymmok's "Treatise of Ireland" prints in an appendix an agreement made in November, 1568, with the three Captains of the Queen's Galloglasses, which probably gives the fullest account of the wages paid:

"For every sparre (which maketh two men) by the name of the quarter's

wages, 5s. 8d. Irish, and the daily diets, half in money, videlicet a penny sterling the meal for each man which for the whole quarter amounteth to 40s. 6d. Irish, and also the other half diets in victuals, videlicet, for every sparre 15 pecks, and a 'hoope' of bread corn for six score and two cakes of bread after the rate of half an hoope of corn for every cake, and also 18 score and 6 quarts of butter unto those cakes after the rate of three quarts of butter to every cake and 5 quarts to a gallon."

These were the rates for Leinster (except Longford), Munster and Ulster: "In Annaly and Connacht the wages for every sparre (are) more, viz., seven shillings Irish." The diet allowance was the same as for the other provinces. These rates were in such cases as the "bonaght" was levied for a whole quarter of a year. But where the bonaght was levied for less than a quarter of a year "there they must have the wages and diets of money only, and no victuals—wages as aforesaid and diets at four-pence per diem for every sparre." Then the editor prints a table of what the cost of supporting their quota of Galloglass came to in the case of those Irish chiefs who were bound by contract with the Crown to support such a quota. For O'Reilly of Cavan, who had to support eight score sparres for a quarter of a year, the figures are:—

Wages in Money.	Diets in Money.	Bread: Corn.	Butter.
£56 Irish.	£242 6s. 8d. sterling.	2,440 pecks.	58,560 quarts.

For O'Dwyer of Kilnemanagh, who had to support 40 sparres for four weeks, the amounts are:—

Wages in Money.	Diets in Money.
49s. 9d. Irish.	£18 13s. 4d. sterling, and no bread, corn or butter.

The corn was valued at two shillings sterling a peck, and the butter at eighteen pence sterling per gallon of five quarts. The hoope must have been a sub-division of the peck. From the figures given above, one can get some idea of what the Galloglass cost. In practice, as they were quartered on the tillers of the soil, they probably exacted a great deal more than their due.

The expense of this force, however, contributed, as I have said, to keep down their numbers.

The third class of soldiers, the kerne (ceithearnach), formed the bulk of the Irish forces. Probably the greater part of the standing forces maintained as *buannadha* (anglicised as buonies and bonnoughts) by the chiefs, came within this category. The term *buannacht* is used to denote the contributions exacted for the maintenance of troops whether Galloglasses or others. The kerne wore no defensive armour, or very little. This is the usual meaning of "naked" in English military documents of the early sixteenth century. The Welsh, like the Irish, despised the use of defensive armour, and we constantly read of the Welsh going into battle clothed only in light linen shirts. Their offensive weapons were swords, darts and bows; but already in St. Leger's time they had practised with fire-arms and had become good and ready shots. Later on we shall find that O'Neill's troops were armed, some with fire-arms, some with pikes.

As for artillery, light pieces were to be found in many of the castles, both those of Gaelic and Anglo-Norman lords. O'Brien had in O'Brien's Bridge, 1536,

"one great piece of iron, which shot balls as great in manner as a man's head," besides smaller pieces. We do not hear of such pieces being brought into the field except by Crown forces.

There are, in the Carew manuscripts at Lambeth, various lists of the armed forces at the disposal of the Gaelic and Anglo-Norman Lords. Like most documents of the time, when they are compared with one another they are found to be full of discrepancies; but they are of interest as showing at any rate what was believed in official circles. I give some extracts dealing with that part of Munster subject to the MacCarthys.

The first, which is in Volume 635 of the Carew MSS., is headed, "The Forces of the Irish borders in the several countries in anno Henry VIII., when the reformation of the country was taken in hand." The mention of Teig Mac Cormac as Lord of Muskerry appears to fix the date to be some time after the year 1537. It is obviously an attempt at a census of the armed strength of Ireland; and some items, such as the ascription to MacAuliffe, a petty chief of Duhallow, of 80 horse-men, while MacCarthy Reagh and his subjects had only 60, would seem to show that it is largely guess work.

According to the manuscript:

	Horse.	Galloglass.	Kerne.
MacCarthy Mór had	40	160	2,000
MacCarthy Reagh had	60	80	2,000
MacCarthy of Muskerry had	40	80	200
MacDonough MacCarthy had	24	80	200
O'Keeffe had	12	0	100
McAuliffe had	80	0	60
O'Sullivan Bere had	16	0	200
MacGillicuddy had	12	0	200
O'Donoghue Mór had	12	0	200
O'Donoghue Glen had	6	0	60
	302	400	5,220

It is noteworthy that only the four great MacCarthy chiefs are said to have Galloglasses. Of the three chiefs subject to MacDonough, only MacAuliffe and O'Keeffe are given, O'Callaghan is omitted. Of chiefs directly subject to MacCarthy Mór four are named, viz., O'Sullivan Bere, MacGillicuddy, and the two O'Donoghues, while O'Sullivan Mór and the various sub-septs of the MacCarthys are not given, probably because they were counted in the forces assigned to MacCarthy Mór. The total of nearly 6,000 men, which the Clan Carthy were supposed to be able to put in the field, makes it clear that the whole armed force at the disposal of the chiefs is meant—rising out, as well as professional soldiers.

The next list, said to have been collected when Sir John Perrott was Lord President of Munster, and dated in the Calendar under 1569 is headed: "The note of the particular Lords and their ordinary forces in Munster," and Carew has added: "Which was maintained by their tenants at all times." This, on the

face of it, would seem to imply that Perrott intended to draw up a list of the standing forces, permanently kept under arms by the various Lords, Gaelic or Anglo-Norman, in Munster. It is to be noted that 1569 is the year in which practically all Munster, Gaelic and colonist, combined under Sir James Fitzmaurice Fitzgerald in what is variously known as the first Desmond rebellion, or the Butlers' wars, so that it would be natural for the Government to try and collect accurate statistics of the Munster forces. It seems, however, rather difficult to believe that the single barony of Duhallow had a standing force of 500 foot and 29 horse, or that Carbery could permanently maintain 1,000 foot and 30 horse. I give the figures for the MacCarthy lands:—

	Horse.	Foot.
MacCarthy Mór with the two O'Donoghues, MacGillicuddy		
and MacFyneen	8	400
O'Sullivan Mór	2	240
O'Sullivan Bere	2	200
Sir Dermond MacTeig (of Muskerry)	20	300
MacDonough (of Duhallow)	8	100
O'Callaghan (ditto)	12	100
MacAuliffe (ditto)	6	200
O'Keeffe (ditto)	3	100
MacCarthy Reagh (of Carbery)	30	1,000
Totals ...	91	2,640

It is to be noted that no distinction is made between Galloglasses and kerne in the details regarding the MacCarthys. Galloglasses are in fact named only in respect of the forces of the Earl of Desmond, who is said to have 200 in Kerry and 160 in Connelloe, in Co. Limerick.

In July, 1569, the burghers of Kilkenny reported that the city was blockaded by a force of 1,400 Gallowglasses, 400 "armed picks" (pikemen?) with "shurts of mayle," 400 gunners and at least 1,500 kern and horsemen, while MacCarthy Mór had in addition 800 men, whose arms are not specified, who had gone off to forage. At the same period we learn that the Butlers had 400 Gallowglasses who were surprised while not expecting any attack (for they were not in rebellion) by Carew and an English force, who slew four score of them.

Another list, this time of the "Bonogh Beges," that is the Gallowglasses, which belonged to the Earl of Desmond, is given. It is interesting as showing an organisation in units of ninety-six. In the County of Kerry the Earl is said to have a hundred axes or sparres lacking four; then MacMorice bore him 48 sparres, in Conolough he had 96 sparres, in Emekelly (Imokilley) 30 axes, in Morice Fitz-Garrett's country 30 axes—three hundred sparres or axes in all. A little farther on, in Volume 635 of the Lambeth manuscripts, is an entry showing how the Crown kept a force of Galloglasses and cessed them on the Lords. We find that MacCarthy of Muskerry had to maintain 160 Galloglasses, Duhallow 180, Carbery 240, and MacCarthy Mór 240. The usual arrangement was that a given Lord or

territory was liable only for a quarter of a year. We must remember that a "sparre" or "axe" meant not only the soldier but two attendants. If the Crown did not actually require to send the Galloglasses into quarters in the country liable to support them, a rate of composition was fixed; usually the district paid £3 a quarter for each Galloglass. One pound in Elizabethan days would purchase three beeves, so we find that the districts under MacCarthy rule were liable to support for the Crown for a quarter of a year 820 heavy armed men, each with two attendants, or pay in lieu thereof £2,460 or 7,380 head of cattle. Over and above this they had to support the standing forces maintained by their own chiefs.

We have an Irish source, dated a little before this period, which throws further light on the manner in which the standing forces were maintained at the expense of the country, and which shows, also, that light-armed troops or kerne were so maintained as well as Galloglasses. This is the statement setting forth the dues claimed by MacCarthy Mór from O'Sullivan Bere in 1565. First, O'Sullivan holds of MacCarthy Mór by the service to be one of his company in the field, and there to serve him in proper person with his whole power.

Secondly, Sir Owen ought to find (*i.e.*, to support) continually five Galloglasses or five kerne out of every quarter of land arable, inhabited and manured in his country, to be afore the guard of the said Earl's person; and in the default of every such Galloglass or kerne to pay 6s. 8d. sterling or one beef at the Earl's choice. This seems a very small fine, in view of the Crown assessment in lieu of supporting a Galloglass.

The next list of forces in Munster is dated 1579. It is to be noted that this year saw the outbreak of the second or great Desmond rebellion; and that it was the interest of the Government to compile as accurate statistics as possible of the armed strength of Munster. The list, which is in Vol. 614 of the Lambeth manuscripts, is part of a long document on the state of Munster, and is headed: "The number of horsemen galloglasses and kerne maintained by the Lords in Munster to serve one upon another for the defence of their countries with which they make roads" (*i.e.*, inroads, raids) "and jorneyes and leave their countries guarded."

I again give the figures for the MacCarthys:—

			Horse.	Galloglass.	Kerne.
Earl of Clancare	...	...	8	160	200
O'Sullivan Bere	...	...	4	40	80
Sir Cormac MacTeig	...	...	24	120	100
MacDonough	...	...	4	80	60
			—	—	—
			40	400	440

These are the only branches of the MacCarthys or their subjects mentioned. It is to be noted that the number of Galloglasses assigned to the Earl (MacCarthy Mór) and MacDonough is the same as that in the first list which I have given, while O'Sullivan Bere now appears as possessing Galloglasses, and the number for Muskerry, Sir Cormac MacTeig's country, is increased.

In a parallel column in the manuscript is entered "What horsemen and footmen they may bear," *i.e.*, the number the Crown might hope to cress on them.

Finally, in Vol. 635, there are some detailed lists, which can be dated to the time of the Survey made on the death of the last MacCarthy Mór, namely, about the year 1598. These lists are on pages which contain MacCarthy and O'Sullivan pedigrees. Instead of enumerating horse, Galloglass and kerne, they mention only foot.

O'Sullivan Bere had 30 foot in Beare; Sir Owen O'Sullivan's sons had 80 foot in Bantry; MacFyneen Duffe had 30 in Beare and Glanerought; Clan Lawras had 30 in Beare and Bantry; The ? (illegible: the Calendar prints *Couthes*), had 40 in Beare—210; O'Sullivan Mór had 160 in Dunkerron; MacGillieuddy had 100 in Dunkerron; MacCrehan had 40 in Iveragh—300.

There is then a detailed list for all the various septs of the Clan Carthy:

	Foot.
MacCarthy Mór had	200
Sliocht Cormac of Dinguile had	30
Clan Donnell Finn had	80
Sliocht Donnell Brick had	12
MacFyneen had	100
Sliocht Owen Mór of Coshmaing had	160
Clan Donnell Roe had	40
Clan Dermond had	20
Sliocht Nedeem and Clan Teige Kittagh had	8
Sliocht Nyne Rydderie had	8
Sliocht Fineen Duff of Ardeanaghty had	6
	—
	664
O'Donoghue Mór had	20
O'Donoghue of the Glen had	40
	—
	60

So we have a total, for the lands directly subject to MacCarthy Mór, of 1,234 foot. This is rather a contrast to the numbers in the first list, in which the same lands are said to have had 2,820 footmen, although no contingent is assigned to O'Sullivan Mór. Still I am rather inclined to take these figures as being meant for the actual "rising out" of MacCarthy Mór's territories, leaving out Duhallo and Muskerry. Munster had been devastated by war and famine in the interval since Sir John Perrott made his calculation in 1569; so that it is quite possible that the actual fighting strength of clans inhabiting, on the whole a very mountainous and sparsely peopled country, was only about 1,200, besides whatever mercenaries the chiefs might employ.

A significant point is the omission of any classification into Galloglass and kerne. In fact the military system of the Irish had been changing; the day of the Galloglass was over.

Already, in the Munster campaign of 1569-72, the worthlessness of the "rising out" had become apparent. The levies thus raised were undisciplined, and could

not be kept in the field for any length of time. The Deputy, Sidney, with a small, but well armed and well disciplined force, was able to traverse the country at will; and in Tipperary the local levies, though full of boast as to what they meant to do, carefully avoided a fight. The introduction of fire-arms had worked a revolution in Irish warfare. Already Saint Leger had mentioned that many of the kerne had been trained to the use of fire-arms, and had acquired more skill in their use than he cared to see.

The Galloglass, in mail, and armed with great axes, were desperate opponents at close quarters; but they were helpless against musketry, and if their ranks were once broken, they were at the mercy of disciplined horse. The great Desmond war from 1579 to 1583 may be said to mark the passing of the Galloglass. At Manisteranenagh, the Clan Sheehy and the Clan Suibhne displayed all the valour of their race; but had at length to yield to the shot and to the pike-men of the Crown forces. Perhaps the last battle under the old conditions of hand-to-hand combat was at the ford of Knockgraffon in 1582, a day disastrous to Tipperary, on which the Earl of Desmond for the last time saw victory shine on his banners. On that day, as the Four Masters tells us, the Butlers left a great part of their cavalry and all their foot soldiers at the mercy of their enemies and the discretion of their foes, so that the hill on which they fought was speckled with the bodies of men slain by the Geraldines in that engagement. And, amongst the dead they mention Colla, son of Maolmuire, son of Donnell Oge MacSwiney, chief constable of the Butlers. We still hear of the local rising out. Thus the Four Masters tell us that, in the same year, the forces of the Earl of Desmond inflicted such losses on the forces of the Lord Roche that "not more than fourteen of the people of the territory who bore arms outlived this engagement," and strangers had to be brought in to repeople the country of the Roches. On another occasion the forces of the Earl raided Duhallow; the O'Keeffes pursued them as they retreated with their prey; the Earl's men turned to fight, and cut off almost the whole of the pursuers. Eighty gentlemen of Duhallow are said, in an official dispatch, to have been slain on this occasion. But against the forces of the Crown, armed with fire-arms, and supplied with well-equipped cavalry, the Earl of Desmond's followers could make no stand. Pelham and Gray and Ormond passed through Limerick and North Kerry at will, burning, cutting down the crops, carrying off the cattle, and slaying old and young, the fighting man and the churl, the blind and the impotent, unhindered by any serious opposition.

To the keen intelligence of the next Irish leader, Hugh O'Neill, it was plain that, to contend successfully against the Crown, he must adapt the out-of-date Irish system to the new conditions of warfare. We are told that, having obtained from the Government the right to keep under arms six companies trained in the English manner, he managed by a system of short service, to pass through these companies and drill a very large number of men. "He infinitely belaboured his men with training," says an English writer in 1596. On the pretext, too, of roofing his new house at Dungannon, he imported a large amount of lead, which it is alleged, he turned into bullets. It is curious that the Irish never attempted the manufacture of gun-powder, but depended on what they could import from the Continent, or buy from the townsmen, who, in spite of Government prohibi-

tions, supplied them with arms and ammunition, no doubt at exorbitant prices.

After a period of temporising, O'Neill definitely came into open conflict with the Crown in 1594. The Calendar of the Carew Manuscripts has several lists of the forces which the Ulster Lords maintained during the later years of the century. They are classed sometimes as shot and pikes, more often merely as foot and horse. And the Irish are said to have had as good pikes and muskets as the English had. Unfortunately the numbers given vary so much as to be of little authority. For instance, a detailed list in 1592 assigns a total of 2,238 horse and 15,130 foot to Ulster, while on the arrival of the Earl of Essex in 1598, when O'Neill's power was at its highest, the total of the Irish forces in Ulster is given as only 7,652, in one list, and in another we have 8,922 assigned to that province out of a total of 19,997 said to be in arms against the Crown in the whole island.

The truth seems to be that the revolted lords waged war by hired troops, recruited from their own followers, or from Scotland, or from other parts of Ireland. Philip O'Sullivan Bere says that at the battle of the Yellow Ford, O'Donnell had a thousand men hired out of Connacht, in addition to his own levies out of Tir Chonnail. The same historian also tells us that in that battle practically all the troops on the Irish side were "light armed," *i.e.*, unencumbered with defensive armour. He distinctly mentions the part played by the "shot" in gaining the victory. At the Curlew Mountains in the following year a body of 140 Gallowglass under O'Rourke, delivered what proved to be the decisive charge of the day; but the victory was due to the skilful handling of the various elements of the Irish force, gunners, spear-men, even archers. Dymmok, in his Treatise on Ireland, in which he gives an account of this battle, mentions that O'Neill "plotted" (*i.e.*, applotted or designed) to be cessed and waged 8,430 foot and 1,130 horse on the several captains and lords of Ulster, and gives the applotment.

At an earlier period in the struggle he was contented with a smaller force of disciplined men, namely 1,000 levied from Tyrone, 1,000 from Tir Chonnail, 500 from Clandeboy, and 1,000 from the three southern counties of Ulster and the three northern ones of Connacht. He obtained Spaniards to help in drilling these.

The result of O'Neill's training was seen, after many minor successes, at the battle of the Yellow Ford, when an Irish army faced and beat in the open field a force equal in strength, and far superior in arms and equipment.

Chance has preserved to us an Irish document showing how O'Neill's troops were organised. It is in the form of a regular contract as to the pay and treatment of a company maintained on the footing of active service. Unfortunately the English version, printed in the Calendar of State Papers, is almost incomprehensible in some passages, a fault which may be due to the incompetence of the translator. It would be worth while to have the Irish original examined and retranslated. It shows clearly that O'Neill was not depending on casual levies; but had raised a permanent paid force.

We know, both from Philip O'Sullivan Bere and from English sources, that the forces with which O'Neill over-ran central Ireland and stirred up Munster to revolt, were largely what one may call regular soldiers. Connacht was, next to Ulster, the great furnisher of these professional swordsmen. Three of the leaders of these captains of "bonnoghts" were the Anglo-Irishman, Tyrrell, and the

Connachtmen—Redmond Burke and Dermot O'Connor. Scots were still employed, but the total overthrow given by Bingham in 1586 on the banks of the Moy to a body of Scots, said to be 2,000 strong, who appear to have gone raiding on their own account in Connacht, would seem to show that the men from the Isles were no longer of much use in the changed conditions of warfare. Surprised at three a.m., and hemmed in between the river and the advancing English, they were cut to pieces almost without resistance.

At least a thousand fighting men, and perhaps as many women, children and camp followers perished by sword and pike, or were overwhelmed by the waters of the Moy.

It seems pretty clear that the bulk of O'Neill's forces were of Irish birth. In fact, if Philip O'Sullivan Bere is to be believed, the same was the case with half the army commanded by Bagenal at the Yellow Ford.

The Four Masters, under the year 1599, give a curious entry. Some gentlemen of the MacMahons of Oriel, with one hundred soldiers, were hired by O'Carroll of Ely, "and at the time that their wages should be given them, O'Carroll, with his people, went to them by night, and slew them on their beds and in their lodging houses. He hanged some of them from the nearest trees." One small party, however, escaped.

The view that during Hugh O'Neill's struggle against the Crown the Irish depended largely on professional soldiers and but little on the "rising out" is confirmed by two facts. Sir John Davies visited Ulster in 1607, just before the Flight of the Earls. His object, amongst other things, was to see what lands, if any, had fallen to the Crown by the death in rebellion of the owners. He reports in his letter to Salisbury that only two freeholders in the County Fermanagh had perished during the course of the ten years war which had ended in 1603, for the "natives of this county are reputed the worst swordsmen of the north, being rather inclined to be scholars or husbandmen than to be kern or men of action, as they term rebels in this kingdom."

And everyone is familiar with the heroic defence of O'Sullivan Bere's Castle of Dunboy, the massacre of the sick and wounded of his followers in their camp in Glengariffe, and O'Sullivan Bere's march from Bantry Bay to Leitrim, starting with 400 fighting men and 600 women, children and followers, and arriving with only thirty-five. Yet the Cromwellian Surveys dealing with 1641 clearly show that practically the whole of the Baronies of Bere and Bantry—except some MacCarthy lands—were still in possession of O'Sullivans. This would have been impossible had any considerable number of the land-owning class in these Baronies been slain when in arms against the Crown.

So we must give credit to Hugh O'Neill and his confederates for an attempt to create a real national army, disciplined and capable of being used in any part of the island.

To discuss the success of this scheme, its merits and its defects—for there were defects—would be too long a task. In what was then attempted we may find the germ of what we in our day have seen, what our fathers long desired, but in vain, to see, the creation of an army not belonging to a county or a province, to an Anglo-Norman Lord or a Gaelic King, but the National Army of Ireland.

The Case for the Establishment of Cyclist Echelons in the Army.

By LIEUT. B. KENNELLY, A.S.I.

I.—GENERAL NEED FOR CYCLIST UNITS.

THE primary aim of the Irish Army is to defend An Saorstát from (internal and external) aggression. Whilst there are divergent views as to the probability of aggression and the details of the form it may assume, there is a general feeling that invasion is the most probable form of aggression with which the Army of this State may have to contend. It is on this assumption that the views of those who hold that the establishment of Cyclist Units in the Defence Forces is essential are based.

DEFENCE AND ARMY POLICY—of course embraces measures for the prevention of such an eventuality. The demonstration of a state of preparedness is probably the most effective measure of prevention. It must be remembered that An Saorstát, with the exception of the Boundary, is sea-girt, and that the only real natural obstacle to foreign aggression is the sea, over which we alone are powerless. The long coast-line offers many suitable landing places—so much so that an enemy seeking to land a raiding-party of moderate size might almost draw up his plans without previous investigation, as to likely landing places. This, in effect, means that An Saorstát is open at all times to hostile incursions. We must not allow our realization of the possibilities of foreign military aggression in our exposed position to be influenced by considerations of such circumstances as possible naval assistance from a friendly power, etc.

DEFENCE ANOMALY.

In the absence of a Navy to effectively guard our shores—a large Army is essential. On economic grounds a large Army is out of the question. The problem thus resolves itself into the question of how to use to the best advantage the small Army available, in order to deny the more important ports and harbours to the enemy and to safeguard as far as possible the safety of the country's vital centres, main supply depots, and other important military points, until such time as the mobilised man-power of the State is called to arms and becomes ready to participate in the Defence of the Nation.

That is the objective which the small Defence Force which the country possesses must strive to attain. To any National Defence Force, no matter how small, an aim any less would be unworthy. The task is large, and the available forces are small. Large reserves, short-term service, and many other expedients must be utilised to counteract the initial set-back of having a small army, no navy, and practically defenceless ports and harbours. Indeed, such fortified ports and harbours as do exist merely serve to protect naval bases and supply stations rather than important land centres; but the difficult and numerous coastal defence problems proper cannot be treated here.

CENTRALISATION OF FORCES.

In the Army itself, the first step of primary importance is judicious disposition of mobile units at the more important strategical points where, by having them

always ready, the worst eventualities may be forestalled. That the Forces should be mobile is imperative. Compact mobile units capable of immediately proceeding wherever desired must be provided.

NEED FOR MOBILITY.

The next important step is the establishment of some system whereby the patrolling of, at least, the important stretches of coast-line can be put into operation without delay. The smaller the force available for patrolling, the more mobile it must become.

We can get no further unless, at this stage, we consider the necessity for mobility in a small Army faced with so heavy a task. Formerly days, even weeks, passed between the declaration of hostilities and the actual mobilization of available forces. In modern times it takes not days, but hours, and each hour becomes of more importance as years go by. Increased speed in transport and communications have ordained this. Mobility is no new factor of war; it existed in the days of Hannibal as it does to-day, but its importance has outpaced its growth, and it is now the key-note of an Army's efficiency. In 1914 the German Army surprised the world by the mobility with which it assumed the attack, and more than thirteen years later we see a still further increase. Mobility must, therefore, be the supreme factor in the Defence Force organization.

POSSIBLE METHODS.

The mobility of the Irish Land Forces can be arranged for in several ways:—

1. By complete mechanization—a costly method for a small agricultural State.

2. By the provision of several large cavalry units—also costly.

3. By organising large compact cyclist units, or

4. By a combination of mechanicalised units, cavalry and cyclists.

The latter method, of course, would meet with more general approval, but on the proportioning many would differ.

MECHANICALISATION.

Take the first—mechanicalisation. The tendency of all armies is in this direction, but is, in each, tempered to the State's individual capacity for subsidising such expenditure as this step entails. As in the case of naval armament, expenditure is the principal controller, so in the Army mechanicalisation can proceed only according to the State's financial prosperity. With the Irish Army such a step must be gradual and slow—even with the existence of a better case than could be made at the moment for the inception of such a drastic change.

CAVALRY.

As for the second—cavalry—the organisation of cavalry units also requires capital expenditure, and in addition entails a heavy upkeep. In this case, moreover, the advantages from our point of view are dubious. Small cavalry units may be hoped for in the near future, but their addition cannot be expected to fulfil all the mobility conditions desired and demanded.

CYCLISTS.

The third method—Cyclists—has much in its favour as offering very strong advantages with special regard to Irish Defence Organisation. The first advan-

tage is that a large number of mobile cyclist units could be organised very economically with practically no capital expenditure. A further advantage is that Ireland, with its excellent road net-work is specially suitable for the employment of Cyclist Units. Enthusiasts for the formation of numerous cyclist units, both regular and reserve, point out that their formation is easy and their maintenance at a high effective strength equally so.

IRISH ROAD NET-WORK.

In considering the advisability of forming a number of large cyclist units, perhaps the first thing to be examined is the road net-work of An Saorstát. A casual glance at a large-scale motorist's map of Ireland will suffice to demonstrate that Ireland is fairly well intersected with roads and that only in very few areas would the road system be so poor as to seriously impede Cyclist Groups. Cyclists can be used to the best advantage where the country is not mountainous and the roads are good and numerous. In practically every case where the road system becomes unfavourable for cyclists either because of the country being mountainous, or the roads few and bad, it will be seen that the possibility of having to utilise Cyclists will be very remote. The West Coast of Ireland offers fewer suitable disembarkation stations than elsewhere, but where it does offer such it will be found that the road net-work is good and favourable to Cyclist operations. This point is important as it is mostly on the West Coast that any favourable road system is lacking, and it is these places which are also unsuitable for the landing of even small raiding parties. Places where military concentrations may be imperative are vital industrial and supply centres or are otherwise of military importance and will be found to be amply linked up by a generous road net-work. Dublin, Limerick, Cork, Athlone, Sligo, and the Curragh, are cases in point. Perhaps another point worthy of mention here is that the tasks allotted to Cyclists frequently do not require the very best of roads. A good wide road will certainly facilitate the rapid movement of large cyclist units from one point to another. For reconnaissance and security duties lower-grade roads may often be more desirable. The typical Irish lanes, by-roads, boreens are sometimes the best type for such active service duties, while even private demesne avenues, paths, and tracks serve their purpose for scouting expeditions, communications, and as routes and short-cuts to ambush positions and information centres. A further point worth noting is that although Cyclist Units may require good and numerous roads at times, obstacles and barricades, bridges blown-up, etc., do not impede such troops beyond inconveniencing them by compelling them to dismount, cross, and re-mount.

ROAD NET-WORK AND CYCLISTS.

A small state, such as An Saorstát is, which cannot afford elaborate defensive organisations, must of necessity be prepared to turn to account every advantage which its terrain may offer, and with a favourable road net-work existing, the possibility of advantageously employing cyclist echelons should be seriously considered.

II.—EXAMINATION OF CYCLIST EMPLOYMENT.

The formation of Cyclist Units in armies may be regarded as the commencement of that mechanicalisation which was gradually to result in the present day and yet untried mechanicalised Brigades which certain armies have organised.

CYCLIST DEVELOPEMENT.

It was only in 1894 that European armies began studying the use of Cyclist Units. Shortly afterwards small cyclist groups made their first appearance in the various continental army manoeuvres where they were used solely as cavalry supports. It was, however, only in 1914 that cyclist organizations based on peace-time experiments, underwent their first real trial in war. The sum total of the experience gained in the Great War was that most European armies immediately effected a considerable increase in the strength of cyclist troops, and further organised them as independent units as well as auxiliaries to other arms. Such countries as already possessed them doubled and trebled their numbers, *e.g.*, Belgium, Switzerland, France and Italy. Other countries which had had no cyclist echelons immediately organised them, for example, Roumania and Spain. Germany, even before the Great War, had one or two cyclist companies in several battalions—certainly the biggest cyclist organisation then existing. To-day, though restricted by the Treaty of Versailles, its cyclist organisation is on a par with its pre-war strength.

One further point in the development of this arm that ought not to be forgotten is that the smaller countries—Belgium, Holland, Switzerland, Denmark, and Roumania—have all strong effective cyclist units.

GENERAL CHARACTERISTICS OF CYCLISTS.

An examination of their characteristics immediately suggests ample reason for the present display of interest by European Armies in these troops. The main characteristics of the Cyclist Groups are speed, endurance, silence, and invisibility. These render Cyclists the units for such tasks as sudden outflanking movements, rapid attacks and counter-attacks, strong delaying action and other effective shock tactics. Definite and rapid manoeuvring power (supplied by the cycles) combined with heavy fire effect (from the rifles and various light automatics) enable them to come into action at will and with vigour on different fronts with but little delay.

OTHER ADVANTAGES OF CYCLISTS.

The first duty which might reasonably be allotted to Cyclists is that of reconnaissance and the establishing and maintaining of contact with the enemy. Being specially suitable for coming into action on wide fronts and for ambushing tactics, the cyclist unit can, with or without other co-operation, undertake such work with confidence in their ability to discharge the duty satisfactorily. For checking and delaying a hostile attack they are most suitable. In fact, it may be stated that Delaying Action is the special task of Cyclists. The strong resistance which they can steadily maintain before a hostile advance must not be underestimated. The wasting of the enemy's strength and energy, the gain in time, and especially the deprivation of the enemy of initiative are advantages too important to require emphasis.

On the defensive, Cyclist Units are quite as adaptable. They form a mobile reserve which can be speedily employed either for frustrating a flank attack, initiating counter-attacks, or readily closing gaps open to the enemy.

OTHER MOBILE TROOPS.

The various activities which mobile troops may be called upon to perform in case of invasion have been outlined. It has been seen that for all these, Cyclists not only are adapted, but preferable. That they are adaptable is widely admitted, but there are many who claim Cavalry to be equally capable of undertaking such tactical duties. There are others, besides, who honestly believe that "Infantry in lorries" would be quite as suitable in many of these combat phases. Again, that Cavalry supported by "Infantry in lorries" are most suitable, is the contention of others.

Each group of theorists has its own arguments to support its view, and it would be as well to examine these carefully to see whether such theories offer reasonable alternatives to cyclists as the most suitable mobile units (available) for the Irish Army.

The various types of mobile troops other than Cyclists are Cavalry, "Infantry-in-Lorries," and certain combinations of same—such as Cavalry supported by "Infantry-in-lorries," and Cavalry with Cyclist supports.

USE OF "INFANTRY-IN-LORRIES."

Sufficient experience has been gained in Ireland of recent years to justify an authoritative expression of opinion as to the use of "Infantry-in-Lorries." The method of adding to the Infantryman's mobility by conveying him in mechanical vehicles is only justifiable where good safe roads exist behind the combat zone. Otherwise this method is fraught with danger. As advance elements they are useless and, one might add, wasted and even dangerous. They cannot effectively reconnoitre any area. Open to surprise attacks they cannot guarantee their own protection. Their intervention is dependent entirely on the condition of the roads. Against ambush tactics they are mere death-traps, and for the purposes for which mobile troops are required in Ireland they cannot effectively be employed except in rest zones.

CAVALRY POSSIBILITIES.

The possibility of employing Cavalry for such attacks as have been enumerated, on the other hand, requires more consideration. Being able to move rapidly over long distances and across country, Cavalry are excellently adapted for mobile warfare. Their chief advantage over cyclists lies in their ability to move across country, but the condition of much of the enclosed terrain in Ireland negatives this advantage to a considerable extent. With the further exception of shock action, cavalry hold no other appreciable advantage over cyclists to warrant the establishment of large units and the additional expenditure involved. The average march per day for cavalry units would be approximately 25 miles, as against 40 miles for cyclists, and in action cyclists can develop a heavier fire-power than Cavalry—with whom the care of horses must always reduce their actual numbers engaged. A further point worth remembering is that Cavalry—unlike cyclists—cannot keep up the strain of continual extensive long-distance manoeuvring.

CAVALRY AND CYCLISTS.

After a preliminary examination of both, it becomes apparent that Cavalry and Cyclists have much in common, and in scrutinising the composition of Continental armies it will be found that the large cavalry units which those armies find imperative are supported by considerable bodies of Cyclists. The characteristics of Cavalry and Cyclists render both suitable for acting in close co-operation.

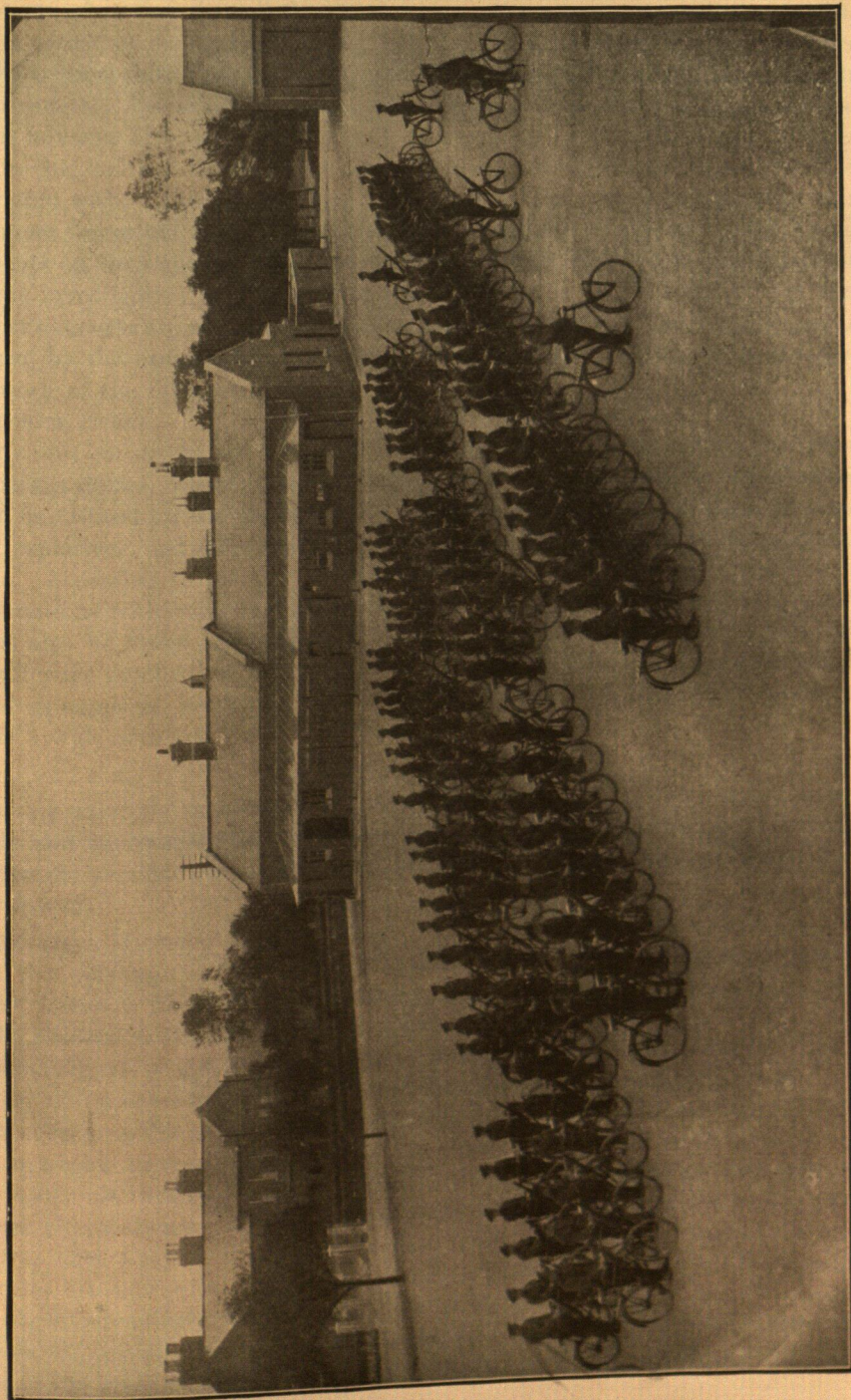
The fact that Cyclists and Cavalry have much in common, and that Cavalry are suitable for certain duties difficult for Cyclists raises the problem of the employment of small groups of Cavalry with Cyclists. Cavalry can reconnoitre the vicinity of commanding positions out of the immediate reach of Cyclists. For cross-country liaison they are admirably adapted. The addition, then, of small Cavalry groups to Cyclists under certain circumstances would considerably quicken effective Cyclist operations. It would further be found that quite small groups of Cavalry either temporarily attached or otherwise, will be found sufficient with well-trained Cyclist Units.

ARMoured-CAR EMPLOYMENT.

In so far as conditions in Ireland are concerned, mechanization on a large scale may be relegated to a very remote future. Much may be done, however, to utilize current Army vehicles to the best advantage, *e.g.*, armoured whippets, motor-cycles and combinations, and others armoured or otherwise. Armoured cars have been employed very successfully in countries in which road net-work and general terrain closely resemble those of Ireland. The enormous advantage in mobility which they possess, combined with the heavy fire volume they can muster, aided both by their protection from rifle and machine-gun fire and by the high command which the car gives, render these vehicles admirably serviceable for reconnaissance and security, flanking movements, street fighting, and other detached duties. They are, however, blind to a certain extent and, moreover, helpless when confronted by such obstacles as trenches or even hasty barricades upon which a small hostile detachment maintains a rifle, grenade, or machine-gun barrage to check the personnel of the car from clearing a passage through. Thus, in order to employ them most effectively, it is necessary to have other mobile troops acting in co-operation. Cavalry suit the conditions required were it not that the difference in speed prevents the cars from availing of their higher mobility to the full. On the other hand, the merits of cyclists over cavalry in this respect enhances the value of the former. Their speed, in the first instance, is better, and enables them to maintain closer contact with the cars; being stronger in numbers and fire-power, they are much more adapted to counter the strong local resistance which requires Armoured Cars to seek the support of other mobile troops.

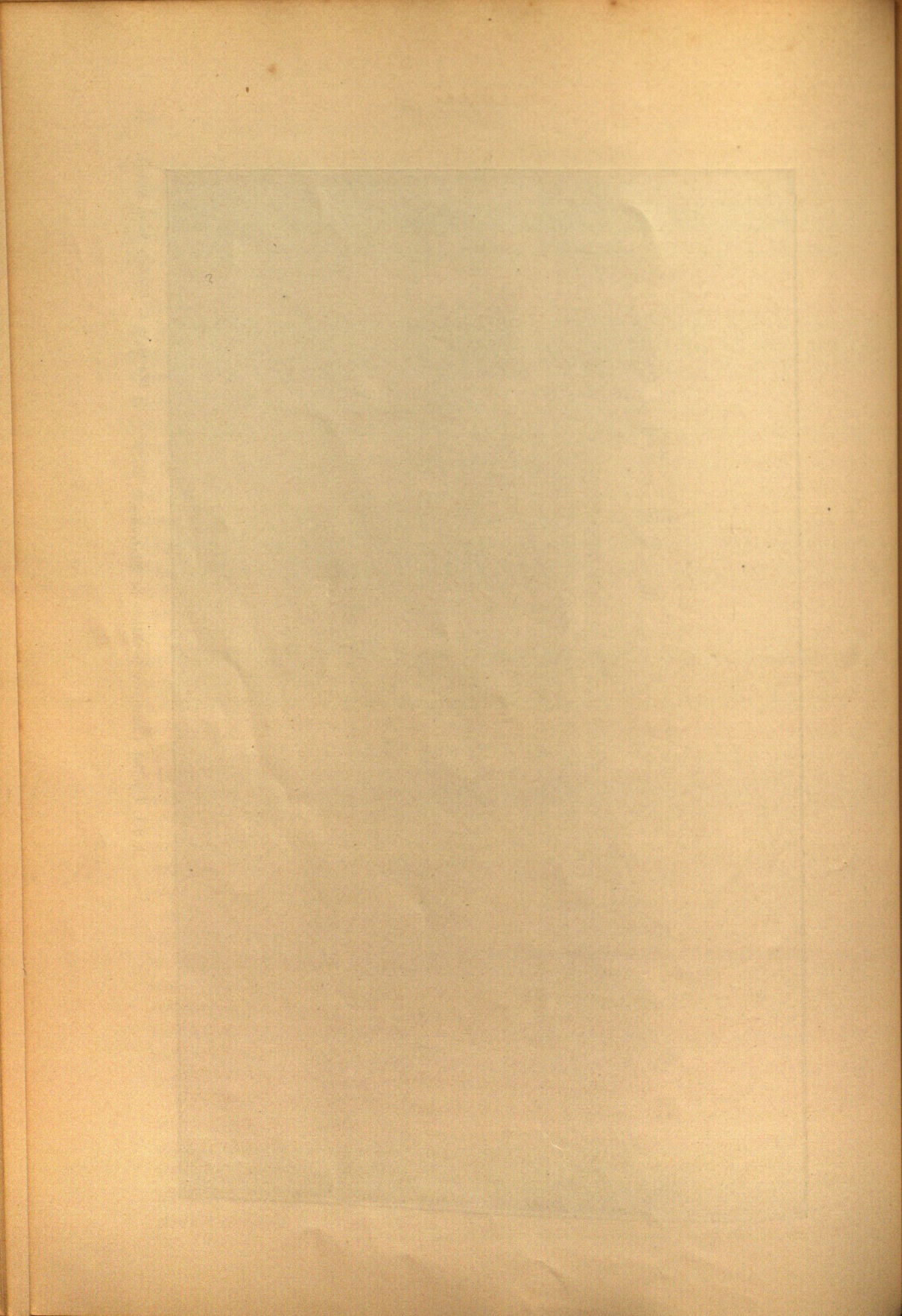
ARMoured CARS AND CYCLISTS.

Armoured cars and cyclists mutually supported form an excellent combination. Both possess heavy fire effect and mobility, and each, by close collaboration, automatically safeguards the weak points of the other. The Cyclists—vulnerable whilst moving—are greatly freed from this danger by the presence of the accompanying cars and the dangers to the cars from their weak personnel and poor powers of observation are likewise minimized by the proximity of Cyclists, on



A.S.I. Cyclist Company in Mass of Platoons.

[Photo by C. Donnelly Swift, Kildare.



whom they can rely as supports when the cars' zone of action becomes restricted. It is seen, also, that if small Cavalry detachments are operating with the Cyclists, such a screen or mobile force as they will then compose would be able to perform all the tactical duties which may be allotted to any mobile unit with the maximum effectiveness. For example, a strong force of this composition acting as a screen to the advance of a large infantry unit, and working by bounds, would definitely ensure that neither the safety of the main body nor its rate of march would be interfered with. The cars scouring the country within a large radius could seize the more important tactical positions, and in addition to protecting the Cyclist elements on their more detailed reconnaissance, would utilise their higher mobility for the investigation of more distant points—secure in the knowledge that their Cyclist supports are within some minutes' (20 to 30) reach. The Cavalry groups, in turn, by the examination of places inaccessible to the cyclists, would complete the work of the other elements.

COMPOSITE FORCE.

Any unit constituted on the above basis should be equipped with motor-cyclists for liaison duties, whilst light vans travelling at a slow but steady speed in rear could be utilised for the transportation of immediate supplies, of which ammunition, explosives, and other repair and hasty demolition materials would be certain items. According to the size of the unit, such auxiliary vehicles as motor cycle combinations with wireless, light ambulances, mechanical repair and supply vans might also be found serviceable. To go even further, light anti-tank and anti-aircraft guns mounted on suitable cars, and even "infantry-in-lorries" could be added as supports, bearing in mind, of course, that such a force would be operating in a wide area and on parallel roads.

III.—THE CASE STATED.

Having carefully examined the tactical employment of Cyclists, both independently and in co-operation with other arms, their development, characteristics, and certain peculiar advantages, it is necessary to weigh up the various points in their favour.

ALTERNATIVE METHODS UNDESIRABLE.

In the opening paragraphs it has been seen that there is a decided need for mobile forces in the Irish Army, owing to the centralisation rendered imperative by the possession of a small Defence Force. It has been further pointed out that economically it is not feasible either to organise and maintain large bodies of Cavalry nor to enter upon a large-scale mechanicalisation of numerous units.

On surveying the general terrain of An Saorstát one immediately sees that the road net-work is very favourable for the effective employment of Cyclists—the only other alternative is mobile troops. Going still further we find that the general circumstances of tactical employment in Ireland favour Cyclists—and we discover that Cavalry and mechanicalised units though well adapted for other countries are not quite suitable in Ireland. It is by no means self-evident that the slight advantages which such units possess over cyclists would counter-balance the initial expense, cost of maintenance, and longer term of service (because of the higher standard of technical training necessary) which their organization would demand.

ENDURANCE AND ADAPTABILITY OF CYCLIST UNITS.

Cyclist Units, we have seen, possess the required standard of mobility. Being extremely adaptable, they co-operate equally well with infantry, cavalry, and armoured cars, and even with aircraft. So adaptable are they that from being reconnaissance, security, and outflanking elements, they can become mobile reserves, and, when occasion demands, assume the role of Infantry either as reinforcements to weak points or to counter-attacking units, or for defence purposes. This transformation can be adopted readily and quickly. Then without undue fatigue the Cyclists, as pursuit troops, can make long detours to cut off retreating enemy, or to assume their duties as advance or flank elements. To this wide range of tactical employment, even Cavalry cannot compare. With Cavalry, the mounts must be considered continually. Let us now see how the Cyclist bears up to the strain of such tasks. A trained Cyclist—whose machine is part of himself—can, with ease, ride 50 miles in 11 hours. It is no exaggeration to say that cycling at the rate of from 40 to 50 miles per diem, a compact Cyclist Company, fully equipped, and without transport, can reach any part of Ireland from Dublin without the loss of one day for rest, and this without any undue fatigue. Cyclist troops performing whatever tactical duties their presence with a larger unit in the field would entail, will not endure more fatigue than the average infantryman of the same force.

CYCLIST TRAINING AND SHORT-SERVICE.

When discussing the undesirability of forming Cavalry Units and such like, one of the reasons mentioned was the necessity for a higher standard of training. For the Cavalryman this is two-fold. In addition to his general duties as a soldier and any specialist tasks, such as machine-gunnery, there is added that of horse-mastership. This would entail a longer term of service than is generally suitable to the conditions of a small army. Particularly is this so in the case of the Irish Army where even the compulsory longer service for certain Special Corps is begrudged. But with Cyclists it is maintained that their training can well be effected within the time required for Infantry instruction.

GENERAL TRAINING.

When recruits for Cyclist Units have served their first month in Infantry depots they reach a stage where their further training can be more proficiently performed at a Cyclist Instructional Station. An additional eight weeks instruction in cyclist groups should then prepare them to take their place in permanent establishments where, by undergoing a combined cyclist training programme, their instruction would be completed.

TRAINING PROGRAMME.

Summarised briefly, Cyclist training would roughly be on the following lines:

1. *Infantry Depot (4 Weeks).*—Same programme as Infantry recruit's first four weeks.
 2. *Cyclist Station (8 Weeks).*—Functions and upkeep of principal parts of the cycle.
- B. School of Cyclist, Squad, Platoon, Company.

C. Elements of Cyclist Hygiene.

D. Weapon Training.

E. March Routine.

F. First Elements of Topography.

3. *Cyclist Station (2 Extra Weeks)*.—Preliminary instruction for such recruits as are chosen to specialise in any of the following subjects:

A. Various Weapons.

B. Scouting and Reconnaissance.

C. Signalling.

D. Elementary Engineering.

E. Map-making.

4. *With the Cyclist Unit*.—Their combined training would be carried out with particular regard for the specialists mentioned in 3, and also:

F. Route discipline and marches.

G. Scouting and reconnaissance (advanced).

H. Despatch carrying and relay services.

I. Tactical employment: various phases.

J. Tactical employment with other arms.

These are merely the broad out-lines, and it may be unnecessary to explain that machine-mastership, dismounted tactical exercises are worked in with the various items above mentioned.

THE TRUE CYCLIST ANALYSED.

In order to effect the training of true Cyclist soldiers, it must be realised that the Cyclist is not an Infantryman mounted on a cycle, but the sole product of independent cyclist training. In a country where most male inhabitants avail of the cycle as a mode of conveyance, one is too prone to regard any cycle-rider as a cyclist in the military sense. A strong self-reliant cyclist spirit has to be instilled into Cyclist troops whose duties in the field are of such a nature as to demand to the fullest extent the prompt use of initiative, quickness of decision, expert skill-at-arms, and strong powers of endurance and self-discipline.

IV.—TENTATIVE LINES OF ORGANISATION.

INDEPENDENT ORGANISATION THE BEST.

Having earlier in this article clearly demonstrated the adaptability with which Cyclist detachments can co-operate with other arms, and that the effective employment of these mobile troops may demand their working now with one unit, now with another, it will be seen that Cyclists should be established as an independent echelon. Alternatives to this method, such as the formation of platoons in Battalions, or companies in Brigades or Armoured Car Corps, etc., have many disadvantages. The principal disadvantage would be, undoubtedly, a definite narrowing in the training of such units, a subjection of their outlook to the problems typical of the superior unit, and certainly a decrease in their full adaptability and effective employment.

THE CYCLIST COMBAT UNIT.

The organisation must have as its aim the establishment of a compact unit capable of working either independently or in co-operation with other arms, and sufficiently strong—without losing mobility—to undertake the duties which circumstances may create.

The Infantry Attack Unit—the three-platoon company—when examined, does not appear unsuitable. Of the tactical duties of cyclists, two are both outstanding and typical of the wide divergence in Cyclist employment—(1) As a security or reconnaissance screen, and (2) as the “ Delaying Action ” Unit. The first requires a force capable of operating over a wide area, and the second force capable of maintaining strong and successive resistances. The three-platoon company as it is, can be expected to efficiently perform both these tasks, but not if numerically weaker.

THE CYCLIST SUB-UNITS: GROUP.

Taking then, the three-platoon company as the unit of comparison, it will be found on descending the scale that if the Cyclist Group corresponds to the Infantry Squad in fire-power and numbers it will also be capable of performing the minor cyclist duties.

SECTION.

At this stage, however, it becomes apparent that a sub-unit equivalent to the now obsolete Infantry Section is desirable in any cyclist organisation. Working on a wider range, the Cyclist Platoon Commander will encounter types of action which, though not calling for the major portion of his Unit, requires more than one Group if achievement is to be guaranteed. Again, where the Infantry Lieutenant always has his unit within effective personal control, it is not so with the Cyclist Lieutenant who consequently will often find it imperative to definitely delegate certain tasks to a subordinate commander. To meet these needs, the Section and its commander must find its place in the organisation of the Cyclist Platoon.

CYCLIST PLATOON AND ITS H.QRS. GROUP.

Four Groups in two Sections would then form a Platoon whose commander in addition to having a second sergeant, will require what, in brief, can be described as a Platoon H.Qrs. Group. Having a wider zone of action and much more divergent duties than the Infantry Lieutenant, the Cyclist Platoon Commander will require a small number of liaison agents who also could specialise in such subjects as engineering, and machine repairs. This could effectively be catered for by, say, two signallers, an engineer, and a cycle mechanic.

COMPANY H.QRS. GROUP.

Similarly, the formation of another group for the Cyclist Company Commander should be considered. The difficulties of control experienced by the Platoon Commander are increased in the case of the Captain. The Company Sergeant, and the C.Q.M.S., whose special subjects might well be Intelligence and Map-making respectively, must be augmented in the first instance by two signallers. In addition, a clerk is essential. He should be a map-maker also, and carry the rank of corporal. There is a further need of the following as well, but a detailed exami-

nation of their order of merit is perhaps irrelevant:—Signalling N.C.O., bugler, first-aid man, engineers, cycle-mechanic, etc. A distinct group of six or more in number is essential for the proper functioning of the command.

COMPOSITE CYCLIST COMPANY THE AIM.

A Cyclist Company on these lines made complete by well-considered additions such as motor-cyclists to H.Qrs. groups of units, or light combinations adapted either for the transport of ammunition or supplies, or for carrying heavier types of machine guns ought to be regarded as a suitable unit for this army—small and economically-bound as it is. The outlay which the establishment of a certain number of these companies would entail would be very small. The present reserve of cycles is sufficient for their initiation, and any future augmentations are obtainable at hand from reliable Irish factories. In point of fact, trials made with military cycles of Irish manufacture have clearly demonstrated their capacity for hard wear and rough usage whilst maintaining an excellent degree of facility in propulsion which does not tax the endurance of the rider.

AUTOMATIC WEAPONS: A. THE THOMPSON.

Whilst dealing with the organisation, it would not be amiss to remark on the advantage which certain automatic weapons offer in Cyclist employment. The Thompson Gun, of which we have had practical experience, recommends itself as the weapon for the Cyclist Group on account of its peculiar qualifications. It is the automatic for the production of sudden, strong, effective fire-power at the short ranges at which the Cyclist will frequently be compelled to engage. Experience has taught us its suitability as an ambush weapon; being small and compact, it become a most convenient automatic for the cyclist to carry. The Lewis Gun, in comparison, is bulky and unadaptable to Cyclist Tactics.

B. THE LIGHT MADSEN.

The Cyclist possibilities of the light type of Madsen recoil automatic weapon, which was recently subjected to severe tests, are also worth studying. In addition to possessing the peculiar suitable qualifications of the Thompson for Cyclist tactics, it has a greater range of fire. Its calibre also offers the advantage of ensuring a better maintenance of ammunition supply in being .303, and thus setting aside the difficulties which ensue in having the two main cyclist weapons of different calibre. The strong claims both of maintaining steady and continuous fire and of being impervious to dirt effects and rust, etc., have been adequately substantiated.

C. THE HEAVY MADSEN.

That a Cyclist Company ought to possess, in addition to its group automatics, a definite number of heavier type machine-guns, so that certain targets may be more effectively engaged, has already been pointed out. The heavy Madsen machine-guns, though of varying character, are but really super-types of the light weapon. One definite advantage which these possess over other machine-guns is that their mechanism and recoil system are the same as for the lighter type. As Instruction in light, heavy, anti-tank, or anti-aircraft weapons is identical. As both anti-tank and anti-aircraft machine-guns should be supplementary weapons of the Cyclist Company, the fact that their personnel would require only the same training as given in the case of the group automatic and heavier support weapon presents a strong case for their adoption—tested and proved as they have been.

V.—RECENT EXPERIMENTS IN CYCLIST ORGANISATION AND TRAINING.

It would be impossible to conclude this article without examining certain experiments which the Chief Lecturer, Army School of Instruction, has recently conducted with regard to the tactical employment of cyclists, their organisation and training, and the results which have been achieved.

THE CYCLIST SQUAD.

Starting with the Cyclist Squad, extensive tests were carried out in which the squad was employed in all conceivable cyclist duties, both as an isolation unit and in conjunction with other squads. Having specially considered the more minute sub-division which the various cyclist tasks demanded, the resultant composition was: 1 Corporal and three distinct sub-groups of three men each, together with one Thompson gunner. The senior soldier of each sub-group acted as its leader and became responsible to the corporal for its control in reconnaissance and other duties that necessitate the squad's deployment into smaller groups. The Thompson gunner remained with the corporal, who was always with whatever sub-group was most central, whilst the rifle-grenadier was a member of one of the sub-groups.

THE CYCLIST PLATOON AND COMPANY.

When the organisation of the squad was sufficiently tested, the platoon and the company formed the subject of experiment, with results practically similar to the organisation already suggested for consideration. The necessity for H.Q.s. Groups was definitely determined, especially in the manoeuvres of 1926, when a three-platoon company was fielded. In connection with those manoeuvres, it is pointed out, however, that although valuable data resulted, those operations could not be regarded as exhaustive tests of real efficiency. On the other hand, certain practical field-days elsewhere demonstrated the wide zone of action over which the Company was effectively able to operate. Among the more important tasks on which the Company was engaged were:—

1. Seeking to gain contact with hostile force.
2. Restricting that force's area of reconnaissance.
3. Threatening the security of the force, its advanced, flank, and rear elements.
4. Maintaining strong delaying action, and
5. Acting as an advanced line of outposts.

GENERAL TRAINING.

Although the troops utilised for the experiment were men employed in stores and other school services, it was found that even with their minimum experience of Infantry duties in the field, their training was both rapid and effective. In this respect an excellent *esprit-de-corps*, rousing up the competitive spirit and ensuring maximum interest in the work, assisted greatly. Drill, weapon training, cycle-repair and management, reports and despatch-riding, scouting and reconnaissance and other minor combat duties formed the general programme. As the N.C.O.'s were special musketry instructors, the development of fire-power was fully investigated with results more or less already described under the heading "Automatic Weapons."

SPECIALISTS.

In addition to the above training, most of the cyclists received specialist instruction of some kind, and thus the various specialists were available for all units and sub-units. In the Squads, Thompson gunners, rifle grenadiers, and special scouts were provided. In the H.Qrs. Groups there were signallers, cycle-mechanics, map-makers, and first-aid men. There were, in addition, understudies for these amongst the general cyclists.

DRILL AND THE "RULE OF THE LEFT."

Greater difficulties were experienced in acquiring an efficient Drill Manual. The larger standing space required for forming up of cyclist echelons, the longer columns and varying speeds, and the imperative short frontage had all to be contended with. "The Rule of the Left," however, quickly decreased many of these difficulties to the minimum. This Rule, apparently contrary to Infantry Drill, deserves an explanation. Remembering that for road movement keeping to the left is the regulation, it will be seen that generally speaking increasing frontage on the left is not feasible, and that for units working and moving by the right the road regulation become an anomaly. In the case of units abroad, this difficulty does not exist, as the road traffic keeps to the right, but in Ireland it has to be counteracted by the "Rule of the Left," which simply means forming up, moving off, and cycling by the left. The left becomes the rule, and in practice renders Cyclist Drill both tactically efficient and automatic. At first thought this would appear to make cyclist drill ungainly and slovenly, but, on the contrary, it goes to make the drill extremely smart and very suitable for Ceremonial Duties.

PRESENT TYPE OF ARMY CYCLE VINDICATED.

In these experiments the majority of cycles used were of the pattern supplied in 1922 to this Army by Irish manufacturers, and the Company Repair State which was kept showed an astonishingly small number of break-downs in comparison with the mileage performed.

UNIFORM, EQUIPMENT, AND ARMAMENT.

The Infantry uniform and equipment was found to be suitable for Cyclists. The automatic arm utilised—the Thompson—was fitted to the machine by adapting the rifle clips, and was ready for immediate action at all times. The Cyclist rifleman was able to carry full equipment on all journeys with less fatigue than the Infantryman. In addition it was also found possible by careful distribution to carry such supplementary items as bivouac tents and extra ammunition, so that each unit, from the Squad up, possessed full equipment. The specialists also, by abandoning certain superfluous articles of the rifleman's equipment, carried whatever special equipment they required: Thompson gunners—extra drums of ammunition; signallers—flags, lamps, shutters; engineers—axes, small cross-cuts, wire-cutters, etc.

CONCLUSION.

The success of the practical tests already carried out, and the existence of data relative to tentative lines of organization, training and equipment, on which the trials were based—suggest that the question of the establishment of cyclist echelons as an important element of our Defence Forces merits exhaustive consideration.

A MEMORY OF THE YOUNG PRETENDER.

By CAPT. E. O'BOYLE.

THE author of "The Hidden Ireland," in discussing the *Aisling*, points out that the personality of the Stuarts had not the same human appeal for the Irish as for the Highland Gaels—and that Irish Jacobite poetry treats them allegorically with eyes and sense ever looking beyond them to Ireland. As far as Ireland was concerned, the cause of the Stuart was something remote, and "the whole struggle cold with distance."

In view of this analysis, it is interesting to find that one tiny spark of tradition in a very limited area in this country does suggest personal contact with the Young Pretender on his flight from Scotland to France, after the battle of Culloden Moor, and it may not be without value to record that tradition. It is regretted that insufficient survives to permit of his landing, stay, and departure being pieced into one consecutive narrative. The Famine probably destroyed many essential memories of the episode—presupposing that the tradition has a basis in fact.

As far as I can trace, there is no record of "Bonnie Prince Charlie" having wandered in Ireland after Culloden. C. S. Terry in his "Life of the Young Pretender," and Andrew Lang in "Prince Charles Edward Stuart, the Young Pretender"—books purporting to give a full account of his movements after the Battle—confine his wanderings to the Highlands of Scotland. But according to local tradition it would seem that he did come to Ireland, and spent some months on the south-western sea-board of Donegal. The greater part of the tradition has been handed down by a family named Morrow, one of a community of small farmers in the townland of Malinmore, Glencolumbkille.

Malinmore, eighteen miles westward from Killybegs, lies at the foot of the landward slope of Rossan Point, the most westerly peninsula in Donegal, commanding a sea-line from Arranmore to the Stags of Broadhaven. In the eighteenth century this sea-line was an avenue for general schooner craft, and it was customary for schooners passing off Rossan, to pick up passengers from local fishing-boats. From the village the land rises gradually for about a mile, reaches a 400 feet level at the nose of the point, and drops sheer to the Atlantic. At the land end of the north flank of the peninsula rises a cliff some forty feet higher than the point proper, known locally as "The Look-out." After a fairly steep descent of 100 feet, the northern shoulder of "The Look-out" headland is scooped so as to form a recess giving on the sea, called "Foxes' Den," where ferns, juniper, and bent grow among huge boulders. It is the only part of Rossan from which the beach is, by way of a rough cliff-path, accessible with any ease. In this recess is a natural shelf of rock called "Prince Charlie's Bed."

Tradition tells that in this ideal cover he spent his nights, and that from "The Look-out," the spot selected by the British Admiralty, 168 years later, as the site of an important observation post, he watched by day for the ship of his delivery.

The surviving members of the present family are two old sisters aged about seventy years. The Mrs. Morrow of Prince Charlie's time was their great-grand-mother. The account given by the mother of the present family (who died in 1910, aged 95), is as follows:—

One morning early in the Autumn of 1746, Mrs. Morrow, on going into her garden at sunrise to cut greens for cattle before the dew had dried (medicinal properties being then ascribed to dew) was startled to find two strange men lying asleep under the hedge at the garden gate. Her cry of surprise roused the strangers, whereupon one of them addressed her—in English, the vernacular of the community in Malinmore, then entirely Protestant: "Be not alarmed, my good woman. We are not come to do you harm." After a short conversation the spokesman asked her if they might enter the house. She gave them permission. Here in a manner they resided for some five or six weeks, their identity and the purpose of their visit a matter of conjecture and a source of curiosity to the farmer, his wife and his sister. During their stay they did not reveal their identity nor yet did they go to any special pains to conceal it.

From the first it was evident to their hosts that the guests were an English gentleman and his servant. Their manner of address and their apparel—the tight breeches and full-skirted coat reaching to the knees—suggested a kinship with the then English landlord of the Bustard estate and his agent who, on rent-collecting rounds, made Morrow's his port of call for the locality. That the master carried a dress-sword—though the Morrows do not mention one—seems probable from a tradition in the neighbouring district of Meenacross, to which I refer below. The sisters of to-day allude to the second man as Prince Charlie's "butler"; possibly he was a faithful retainer. Apparently they were fugitives anxious to quit the country, as evidenced by their daily routine. Their nights were spent in hiding in "Foxes' Den," their days partly in the house and partly on "The Look-out," as if watching for a vessel.

The incident which led the Morrows to suspect the identity of their guests came about in this way: Morrow's sister suffered from the king's evil. One morning the strangers returned from "Foxes' Den" to find her brother dressing a sore on her arm. The master examined it. "Poor thing," he said, "I have known those who could cure you of that." Thereupon he rubbed the affected part with his hand. He did this on three consecutive mornings, after which the arm was completely healed. On another occasion the chief guest had a bleeding from the nose, and was accommodated with a choice towel from the family linen-press. When handing it back he told them to preserve it, suggesting that it might be useful for future cases of scrofula. They did as he directed. The towel circulated for many years in the neighbouring parishes, and was last heard of in Killybegs, worn to shreds, threads of it having been carried away by generations of emigrants to America. The cupboard from which Mrs. Morrow took it is still to be seen, "held together by paint" in the words of the present occupants of the home-
stead. The chair on which the stranger used to sit fell to pieces in 1908.

From the incident of the curing of the King's evil the Morrows surmised that their visitor was none other than the hunted prince. But it was not until the arrival of the land agent, some months after the departure of the strangers, that their surmise was confirmed. The agent, a resident of Fintra House (two miles from Killybegs and sixteen from Malinmore) told them that his master, while standing at a window one morning, had exclaimed: "That's Prince Charles Stuart crossing the strand," that he had intercepted him, prevailed on him to pass the night in Fintra House, and on the following morning directed him to Morrows.

From this it would seem that the Prince was moving north-west from the south-east bend of Donegal, and crossed the strand of Fintra Bay in order to take a short cut or to avoid the highway.

The circumstances of his departure from Morrow's—beyond the fact that he offered "to pay in gold for his keep," an offer which was not accepted—are lost to memory, but tradition finds him next in Meenacross, a lonely stretch of moorland hidden among the mountains, six miles north-east of Malinmore. Among the few inhabitants here English was unknown, save for an occasional word brought back by some native who had travelled as far as Sligo with the crew of a kelp-boat. (Even to-day "Béarla Min na Croise" signifies locally a negligible quantity). The first night's conversation between the housewife in Meenacross and Charles is still a humorous fireside rehearsal in neighbouring parishes. Here is a fragment: (To Charles)—"Bed, bed, a dhuine uasail! Chóirigh mé sleep duit." (To a few neighbours who had gathered in): "Tá sé 'na luighe anois, agus níl oiread béarla i Min na Crois's a cuirfeas 'na shuidhe é ("Bed, bed, sir! I arranged a sleep for you." "He is in bed now, and there is not as much English in Meenacross as will get him up.") It is probable, however, that the Prince by reason of his Scottish association and his intercourse with the Highland clans had more knowledge of Gaelic than he was credited with on that occasion. Tradition, moreover, associates him with an Irish song, "Lá cois cuain" (One day beside the sea) which tells of his watch for a boat, and gives his impressions of his Irish environment.

The length of time he spent in Meenacross is disputed, but the keepers of the record agree that he lived there principally at night, and spent his days in Port, an impregnable mountain fastness, 3 miles to the north-west, ringed on one side by an almost impassable bog, and on the other by the Atlantic. While in Port he made the acquaintance of one Andrew McGinley, and seems to have whiled away the time instructing the latter in the art of fencing. The sword he used was described to me as follows by one Niall Crumlin, who died in 1926, aged 87—slender-bladed, light, of medium length, having a short, plain grip and a cup-shaped guard.

Andrew, as an occasional man on divers trading vessels, sometimes visited Sligo, then a garrison town. The only heirloom he bequeathed to his family was the story of one of his fencing exploits in the distant city. A military bravado forced a quarrel on Andrew and challenged him to settle it by duel, choosing swords. He invited his Commanding Officer to be his second, and witness the manner in which he would "spit the pig." The selection of the ground and other formalities having been completed, Andrew demanded his weapon that he might test it. Taking the blade in his hand, he bent it until the point almost touched the hilt, and then released it. With a flash the sword shot whirling into the air, and before the astonished onlookers could follow its dizzy flight, Andrew had it in his hand again, and on guard. Impressed by this display, the Officer forbade further hostilities with a reminder to the bravado that not alone would he be wiped out but the entire regiment could be picked off by such a swordsman in a series of duels. Thus did Andrew McGinley do credit to his royal instructor.

Tradition stops abruptly in Meenacross and has left no record of his adieu; presumably the anxious watching of the royal fugitive was at last rewarded, and from the Donegal coast he secretly boarded the frigate which brought him to France.

“SI VIS PACEM”

By COMMANDANT L. EGAN.

DESPITE the fervently expressed hopes of those well-meaning people who picture in the near future a Utopian era when war will have been relegated to the comparative oblivion of the history book, there is at the present time no reliable indication that human nature has altered appreciably since Heraclitus of Ephesus preached the inevitability of war twenty-five centuries ago.

Strictly speaking, it is only within comparatively modern times that the ideal of a universal and lasting peace has received anything approaching serious consideration. The quasi-philosophic antagonism to war as war which developed during the nineteenth century, owed its existence in no small degree to Kant's treatise, "On Perpetual Peace," which portrayed war as the foundation of all evil and the destruction of all good. It is one of the ironies of history that the great German philosopher's work, which appeared in 1795, was followed in a couple of years by a despotism that turned the European plain into a shambles for nearly a quarter of a century.

In ancient Rome there was a gate dedicated to Janus, which was open during war and closed during peace. We have it on the authority of Livy that, prior to the Christian era, it was closed only on four occasions. Even if modern capitals lack similar war-meters, the conscientious chronicler would have to record the fact that nations have lost little of their pugnacity in the space of two thousand years. The present century has already experienced its share of war on a big scale. The South African campaign was not yet finished when the new century began, and was followed in rapid succession by the Russo-Japanese War, the Balkan War, the Italo-Turkish War, and, finally, the Great War, not to mention numerous minor wars in various parts of the world. The exponents of the Kantian creed must derive slender solace from the lessons of history.

The human race, like every other organic element of creation, is governed by the relentless natural law of struggle. Every phase of organic life is a struggle, an unceasing conflict where the fit survive and the weak succumb. Even a casual observer can see this struggle for supremacy in operation in the zoological and vegetable worlds; although it is true that in these domains the struggle is largely an unconscious one. With mankind it is conscious, but regulated by social ordinances of one kind or another. The law, religion, custom, fear of criticism, a hundred different factors, tend to maintain that thin veneer called civilization, and constrain the individual to behave, outwardly at least, in accordance with the recognized standards. Nonetheless, even in circumstances far removed from the din of battle, we find him striving, with a tireless ambition, after wealth, comfort, and honours. Yet, the innate inconsistency of human nature inclines man to assume an air of virtue and justification even in the accomplishment of the unethical. All too frequently he "recks not his own rede." The well-fed financier who presides at charitable functions feels no compunction in manipulating the stock-market and ruining thousands in the process. Poker-faced diplomats deliver their souls of post-prandial epigrams anent the horrors of war, and invest their unearned incomes in armament firms. Hypocrites? Certainly. We all

are in a greater or less degree. Diogenes would never have required a lamp if he had confined his search to Pharisees. True, we may not all be Uriah Heeps, but we like to be taken, at least, at our own valuation. And even if we sometimes don the cloak of humility and belittle our qualities, we like to be accused of excessive modesty.

The characteristics of the individual are borne out in the nation. The microcosm is a mirror of the macrocosm. There is, however, one very important difference. When the ambitions and requirements of individuals clash, they must be adjusted, if at all, by recognized constitutional methods. Otherwise, any, or all, of the parties to the dispute leave themselves open to prosecution at the hands of the Law, the supreme arbiter within the State. As between nations struggling for a place in the sun, there is, as yet, no proved all-powerful tribunal to settle satisfactorily the ever-recurring jealousies and bickerings which enliven the realms of international politics.

What about the League of Nations? The same idea has assumed concrete form at various periods in authentic history, only to fall to pieces when two or more great powers wanted the same thing—and meant to get it. The best that can be said of the pretentious institution at Geneva is, that it is no worse, possibly a little better, than its predecessors, the Holy Alliance, the Hague Tribunal, the Triple Entente, and the Triple Alliance, all of which professed, in their day, to worship assiduously at the shrine of international peace.

The League, like its historical prototypes, can never overcome the handicap of its parentage. For it is the off-spring of War, an off-spring to the development of which many and varied influences contributed. Even if there were no other indications, the Treaty of Versailles made it perfectly clear that, while the crippling of Germany was the main object of the Entente statesmen, England and France were not exactly of one mind as to what would constitute an adequate crippling. From the British viewpoint, the disappearance of Germany as a naval and commercial rival was essential: France was more concerned with the total extinction of the German military machine and the removal for all time of the spectre of Sedan which had haunted French diplomacy for close on fifty years. If the truth were to be told, England could not have viewed with equanimity the establishment of French supremacy on the Continent. Stripped of plausible diplomatic explanation, the clauses of the Versailles Treaty which define the limits of the German post-war army bear all the ear-marks of a Franco-British compromise, which left Germany with a force too small to cause France any immediate worry, yet large enough to be regarded by England as something of a brake on French ambitions. The carving of the old Austrian Empire provided ample material for the setting up of new hybrid states, practically all of which have since come to regard France as their fairy godmother. Italy, strange to say, shared but lightly in the spoils of war. If it had not been for the occupation of Fiume by D'Annunzio it is exceedingly doubtful whether that port would have become Italian property. In Italy, opposition to Italian aspirations in the Adriatic was attributed mainly to France. Italy has not forgotten.

Having remodelled Europe and part of Asia and Africa to their liking, it was only natural that England and France should have been anxious for a prolonged

peace which would enable them to consolidate and exploit their gains. President Wilson provided them with the basis of an idea, and the universal desire of the plain people of the world for a lasting peace supplied the appropriate atmosphere. "It has always been," says Treitschke, "the weary, spiritless, and exhausted ages which have played with the dream of perpetual peace." It is some fifty years since the German historian made this frank assertion. It was true then: it was always true. But never was its truth more fully emphasised than during the five years immediately following the Great War. The echoes of the guns had hardly died away when the plain people of the warring nations cast off the effects of the false glamour with which highly-paid propagandists had adorned the greatest holocaust in history. While the financiers, the diplomats, and the profiteers wrangled over the spoils, the war-scarred heroes of yesterday became the maimed civilians of to-day; and the gay war-ditties, having served their purpose in theatre, camp, and trench, assumed the significance of a funeral dirge. While a dazed world was binding its wounds, and endeavouring to pick up the threads of normal existence, people of all classes joined in the cry for a lasting peace. Plausible politicians and disheartened clergymen, fire-eating generals and stubborn pacifists, belted earls and bare-footed Communists, vied with one another in proclaiming the gospel of universal brotherhood. There were divergent opinions as to what the war was about, who began it, and, even, who won it. On one point, however, there seemed to have been unanimous agreement—that never again should the nations resort to arms to solve their differences. All of which was very natural and very human.

Individuals forgot for the moment their own losses and sorrows, and shared the general conviction that, after all, the "war to end war" had not been fought in vain. Out of this welter of bloodshed, diplomatic intrigue, and human emotion, sprang the League of Nations. The christening ceremony was marred by the refusal of America to accept the role of sponsor. Germany's felicitations were neither asked nor expected. Russia was too busy with her own domestic problems to worry about her neighbours' affairs. So the nations most intimately concerned made the best of their opportunities, and, with the assistance of an accommodating press, launched the infant League on what promised to be a highly successful career.

What of to-day? Has this eight-year-old youngster fulfilled the prophecies of its sponsors? Has it, in fact, contributed anything towards the cause of international peace that could not have been accomplished equally well by the Balance of Power—that fetish of pre-War diplomacy? Or is it even possible that the League is merely a screen behind which the high-priests of the old cult continue their devil-worship? Time alone will fully answer these questions. One can only speculate as to what the answers will be.

Whatever other charges have been levelled against diplomats and politicians, they have seldom been accused of belittling their own work. Indeed, there are no greater adepts at presenting in the most favourable light the results of their efforts. In the course of an article dealing with the work of the League of Nations from its foundation up to the end of 1925, Sir James Salter, K.C.B., a prominent League official, says:—

" In these six years the League has averted hostilities in some half-dozen cases, and probably prevented at least minor wars in several of them. It has made a substantial contribution to Europe's recovery by the guidance and influence of the Brussels Financial Conference; by the direct reconstruction of Hungary. . . . In some of the disputes which it has handled it has been indecisive or ineffective; in others the nature of its action has apparently been determined as much by the relative strength of the disputants as by considerations of ideal justice. It has made no material progress in securing disarmament. Its work in removing the fundamental causes of war, and in particular those which spring from economic policy, has only begun. . . . If, however, our standard of judgment for the results of the six years is not the pre-War position, but the ultimate ideals of the League, it is no less clear that the League's work is only in its infancy. The League is not yet universal in its composition. Its ability to deal with a first-class dispute between first-class Powers has fortunately not yet been tested. There is as yet no complete assurance that such a dispute would find the League united and effective. Nor has more than a beginning been made in removing the causes from which such disputes may arise."

Endeavouring to answer in the affirmative the title of his recent book, " Will Civilization Crash? " Commander Kenworthy maintains, and rightly so, that so long as war is recognized as an institution, the League of Nations can never prevent it. In a foreword to the same book, H. G. Wells writes:—

" As a means of settlement for minor difficulties, which the States concerned want settled, it (the League) has a considerable usefulness, but as a guarantee against graver quarrels it is beneath contempt. It is more than useless because it is dangerous; a great number of people in Europe and America are persuaded that it is a sort of war preventative, and that when they have paid their subscription to a local branch of the League of Nations Union and been to a lecture or garden party once a year under its auspices, they have done all that they can reasonably be required to do to secure world peace for ever. Upon many such excellent people the existence of the League of Nations acts as a mischievous opiate. They would be far more actively and intelligently at work against the war-makers if it did not exist to lull them into a false security."

These are the opinions of two widely-separated schools of contemporary political thought; yet, making due allowance for the pardonable optimism of Sir James Salter, the frank realism of Commander Kenworthy, and the inevitable cynicism of H. G. Wells, the basic difference between their views is slender enough to provoke serious thought. Nor do they differ very materially in their conclusions from Sir Austin Chamberlain who recently said:—

" As a clearing-house for international disputes, the League of Nations is a wholly admirable institution. In many minor questions it has already played a most useful part, but at present, and probably for years, it will be unsafe to count upon its authority being sufficient to restrain a Great Power in any case in which that Power considers its vital interests to be at stake. The time may come when the League will be able to deal not only with incidental disputes, but even with more permanent and deep-seated rivalries. It is vain to deny, however, that this

stage has not yet been reached, or to hide the fact that a sense of security cannot in such vital matters to-day emanate from Geneva."

The blunt truth is that the League is already a discredited institution. While most, probably all, of the members recognise this fact, individually their position is analogous to that of the lady who attends the village sewing-class, not because she is particularly anxious to ply her needle, but to safeguard herself in the frank interchange of confidences and gossip popularly, perhaps unjustly, associated with such gatherings of the fair sex.

The resignation of Lord Cecil after the failure of the Naval Limitations Conference last August, and that statesman's published reasons for his drastic step, established beyond doubt, not merely in Europe, but throughout the world, that, from the English point of view, the advent of another "war to end war" is a distinct possibility. If any doubts remained regarding her outlook they were effectively dispelled by Sir Austin Chamberlain at the Eighth Assembly of the League in September. The British Foreign Secretary made it plain to all and sundry that, where the ideals of the League happen to clash with British Imperial interests, the League must either climb down, or be flouted by "the smaller but older League," the British Empire or Commonwealth. Sir Austin's speech created something akin to consternation in the diplomatic dove-cots of Europe by confusing still further the riddle of British policy, and rendering more remote than ever the ultimate practical success of the League. On the other side of the Atlantic, Uncle Sam chuckled over the foresight which had kept him true to the principles of Monroe.

In such an atmosphere of mutual doubt and suspicion, the representatives of the nations assembled in conclave at the beginning of December to discuss the problem of disarmament. It was unanimously agreed beforehand that Europe in particular, and the world in general, could never shake off that chronic fever of mistrust and jealousy until the cause of the fever was first removed. Nor was the cause far to seek. Everybody recognized it in the endless competition in armaments which, like an ulcerous growth, irritated the whole body politic. Previous attempts to deal with the disease indicated that no drastic treatment would be prescribed at Geneva. The great majority of the delegates had a conservative dread of surgical operations.

But what promised to have been a very drab consultation was rudely shaken on the very first day by the suave Soviet envoy, M. Litvinoff. He did not attempt to emulate his more famous fellow-countryman, Dr. Voronoff, by any mention of rejuvenation. He said in effect: "This abscess is the whole cause of the trouble. Why not remove it?" And to make his meaning clear he produced the surgeon's knife in the shape of his now famous disarmament proposal.

M. Litvinoff is a humourist. Only a humourist could have tabled such a proposal before such an audience. Quite *au fait* with European affairs and European opinion, he must have known that his suggestion would receive about as much welcome at Geneva as a toast to Mr. "Pussyfoot" Johnson at a Froth-blowers' Reunion dinner. And so it did. So, also, will any similar proposal.

Of course, the conference closed on the inevitable note of optimism, and the delegates returned home with the stereotyped reports of clearer mutual under-

standing and lukewarm prophecies of an early solution of the problem which drew them together. The old game continues and will continue until the Four Horsemen ride again on foray over the European plain.

The world has already forgotten its nightmare. The "weary, spiritless age" mentioned by Treitschke has passed away, and given place to the same old jealousies, the same old hatreds, and the same old ambitions that paved the way for the Great War.

At the present moment Europe is an armed camp, "fermenting calamity in the devil's vat," as Mr. Lloyd George so tritely observed in a recent speech. France, merciless in victory, has surrounded her traditional enemy, Germany, with a ring of steel composed of the overgrown armies of Poland, Czechoslovakia, Rumania, and Yugoslavia. Faced with the problem of a falling birth-rate at home, the French War Ministry has turned much of its attention to the comparatively unlimited resources in man-power of the African colonies where legions of native soldiers are being enlisted and trained.

Within the past half-dozen years a new menace has raised itself on the French horizon. Under the Spartan guidance of Mussolini, Italy has thrown aside the lethargy, which has been almost a national characteristic for centuries, and bids fair to regain no small portion of her glorious heritage. No modern statesman has been so constantly and severely criticized as "Il Duce." He has been called in turn a murderer, a despot, a maniac, a monster, a wizard, a genius, a liberator. At any rate, he is always an enigma. But nobody can deny that he has performed something like a miracle in advancing Italy from a comparatively second-rate nation into the very forefront of first-class powers. Within ten years he hopes to be in a position to mobilise 5,000,000 soldiers with a corresponding supply of armament. Nothing short of the previous annihilation of Italy will prevent the fulfilment of this ambition. Yes, M. Poincare may well feel anxious about the prospects of another crossing of the Rubicon!

In Eastern Europe the eternal Balkan problem is as far from adjustment as ever. Farther East, Mustapha Kemal, the Turkish Mussolini, is forging a new and virile nation out of the ruins of the former empire of the Sultans. The sinister, mysterious Russian Soviet, a pariah among the nations, continues to set at naught the prophecies of disintegration which have provided bread and butter for so many imaginative journalists during the past few years. Perhaps not a few European diplomats are mindful of the fact that France passed successfully through a similar revolution, the only material difference being that, instead of a king's head, Lenin, emulating Danton, might have declared that the Soviet had thrown down the head of an emperor as the gauge of battle to the European nations. France duly produced her Napoleon. Small wonder that Russia should cause misgivings in the Chancellories of the Powers!

America's reply to the failure of the Naval Limitations Conference took the form of a naval programme which, in the course of a decade, promises to call for a substantial revision of "Rule Britannia" unless England is prepared to court bankruptcy to preserve the traditional interpretation of the well-known anthem. This development, coupled with the persistent refusal of the United States to consider the question of debt cancellation, has not improved Anglo-American re-

lations. Uncle Sam argues quite logically that, if the debts were cancelled, the money thus saved—his money—would be devoted to expanding the already bloated armaments of the restless European powers concerned. At the same time, he has indicated in no uncertain manner that he does not intend to be caught napping in the event of another war.

However unpalatable the fact, international relations and conditions have now reached a stage when reputable authorities have begun to talk quite glibly about "the next war." Within the past couple of months Sir Ian Hamilton expressed the opinion that the conflict was almost due. Marshal Foch has been giving his views on the probable form the struggle will take. Thomas Edison, the famous inventor, is convinced of the inevitability of an Anglo-American war before 1940. The ordinary citizen can detect material for half a dozen wars in the present European situation. All over the world scientists closeted in secret laboratories are daily evolving new and terrible weapons for the destruction of human life. Gases that defy any known protective device, powerful rays that annihilate and destroy at incredible distances, guns that easily outrange "Big Bertha," explosives that make T.N.T. seem like a slap-bang, mechanical devices that make Capek seem a realist—these are some of the play-toys which science is preparing for the nations who are travelling a sure and swift road to perdition.

The League of Nations may yet accomplish the miraculous and confound its critics by achieving international disarmament, and substituting arbitration for the sword. Even then its work will have only begun. For human nature cannot be changed: human passions cannot be eradicated. In the event of absolute disarmament how is it proposed to bring a recalcitrant nation to heel? An economic boycott? Hardly. What is to prevent the offender from realizing his ambitions by the armed conquest of his peace-loving neighbours? An international police force? Possibly. But the harmonious organization and administration of such a force demands something more than a League of Nations. It demands, in fact, the virtual extinction of national entities as such, and the evolution of a world-wide United States with a supreme central government. Such a vision has attracted the attention of more than one contemporary political philosopher, and is an unconscious tribute to the Soviet ideal of a world converted to Communism. But the writers and thinkers who are in the habit of using the United States of America as an argument for the feasibility of establishing world unity on the same lines seem to forget that, while America has only one real racial problem, Europe alone has at least a dozen. Again, it must be admitted that the sword played no small part in cementing the various states of the Union. The only method of realizing this vision of a united world would seem to be world conquest by a super-Napoleon. It will never be accomplished by diplomacy.

If disarmament is not complete it will simply mean that the naval and military strength of individual nations will be reduced by a fixed proportion, leaving the relative strengths much the same as they are at present. Such a step can hardly be expected to contribute very materially towards the cause of international peace.

The more closely one examines the whole question of a permanent international peace the more difficult does its ultimate realization appear. Nations have learned from bitter experience that preparedness for war is the best known guarantee

against aggression. And so it will remain until a better insurance is provided. For small nations like our own this lesson has a special significance. Our present measure of freedom and peace was won by the sword after our appeals for justice had been ignored by the nations who, during the Great War, disclaimed most loudly about Self-Determination and the Rights of Small Nations. It would be a very doubtful type of economy which would leave the country open to its enemies by failing to maintain a defence force at least sufficiently strong to render the conquest of this island a prolonged and costly enterprise for an invader.

Prudent is the householder who uses strong locks and keeps a reliable watchdog. Trusting is he who pins his faith on either alone. Only a fool dispenses with both.

THE MAN WHO COUNTS.

IT is not the critic who counts; not the man who points out how the strong man stumbled, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena; whose face is marred by dust and sweat and blood; who strives valiantly; who errs and becomes short again and again; because there is no effort without error and shortcoming; who does actually strive to do the deeds; who knows the great enthusiasm, the great devotions, spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement; and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat.—*Theodore Roosevelt.*

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THE TEACHING OF KEVIN O'HIGGINS

FOREWORD.

IRELAND is passing through a very important formative phase—the stage of fostering in the individual citizen regard for certain basic principles essential to the proper functioning of the State. Had the blossom of early promise been allowed to come to fruit, no doubt the personality of the late Minister for Justice would in large measure be imprinted on the future body politic. In speech and lecture he formulated the principles which guided his own conduct in public affairs and which should guide the conduct of the humblest citizen. Of these principles he had a clear-cut conception. In no way can his memory be better venerated than by disseminating and practising the gospel which he preached to the young State—moral courage in the individual, and respect for democracy in the form of majority rule. Thanks to the courtesy of his family, AN T-OGLACH has permission to publish certain of his papers in which he publicly enunciated his views on these matters. The circumstances under which the words were spoken are now old, but the truth underlying them and the lessons they convey cannot grow old.

THE CATHOLIC LAYMAN IN PUBLIC LIFE.

(Read at a Meeting of the Catholic Truth Society of Ireland).

EXCEPTION may be taken to the title of this paper on the ground that the Catholic Layman whom it envisages is the Irish Catholic Layman, and that hardly any reference is made to the Catholic Layman in America or on the Continent who is so distinctive a force in their public life. I must claim your indulgence in so restricting the discussion and for wandering off perhaps immoderately into a discussion on the specific political quality of the Catholic Layman rather than a celebration of vivid Catholic personalities in public life. In any case the subject cannot become threadbare. As the operation of the Treaty brings us into more intimate relations with the rest of the world, by the next meeting of this Society it should be quite feasible to have a paper read with the authority of experience not merely on the Catholic Layman in Irish public life, but on the Catholic Layman in International public life.

Whatever our personal political affiliations may be, no man in his sane senses can deny that the past few years have definitely marked the turning of this Nation from a bye-road on to the high-road, and that with our new powers and importance as a people have come very weighty responsibilities. We cannot escape from these responsibilities into an imaginary vacuum where there is no responsibility, and where there is no need to reconcile political theories with the facts of life. Liberty means responsibility in its first and last analysis, and it is an unfortunate fact that large numbers of our Catholic fellow-countrymen have fallen into the very old and very false doctrine that liberty is licence to follow your own

instincts without regard to the general welfare. It is an historical truism that a people enslaved for a long period are apt to lose the full use of their political faculties. The faculties of resistance and agitation are over-developed at the expense of powers of organisation and exact capacity. It takes a Nation just liberated some time to realise the responsibilities and duties connoted by its new status, and within the Nation it takes the normal individual a very long time to perceive that national freedom does not mean endless holidays for himself. Alternatively it takes the abnormal individual, either above or below the average citizen, a long and painful apprenticeship to learn that man is a social being and not a wild animal. In fact it is just the abnormal type who, when he seizes fully upon the fact that Government is an exorable necessity to civilisation and, incidentally, to his own personal welfare, and that the only alternative to Government seems to be chaos, becomes the most intolerant conservative of everything established. Extremes have a way of meeting, and fanaticism would seem to be rather a matter of temperament than of intellect. Is there such a difference, for instance, between the methods of Calvin and Philip of Spain, Robespierre of the Noyades and Louis XIV. of the Dragonaddes, Marat of the September massacres and the Duke de Guise of the St. Bartholomew massacres, or Trotsky and his distinguished compatriot and predecessor—Peter the Great? Czolgosz struck down President McKinley of democratic America with the pistol, and Ravailac struck down Henry IV. of aristocratic France with the dagger, but the same temperament prompted the assassin in both cases.

History should teach a young Nation to walk warily. Is the political growth of a Nation in the predicament of this country so different from the growth of the individual—as a child guided in every step, and as a man, his own master, with a man's responsibilities? We know that a young man, free from control for the first time is often prone to run wild. And we know that the stricter the control the more violent is the reaction. But he learns by experience, bitter experience perhaps, that he must discipline himself, as we will learn as a people that we must take the choice of disciplining ourselves or forfeiting our future. Liberty means responsibility and hard work. We must realise that, though there are no signs of a general realisation of that fact. Such a general realisation of what liberty means ought naturally to arise first amongst the Catholic laity, who have inbred in the bone the doctrine of moral responsibility. All the more would we expect the Catholic laity to be a social force in the community since the Treaty has given them control of public life if they choose to exercise such control. But the Catholic laity have not chosen to intervene with a decisive voice in our national affairs. It may be some years before the Catholic layman has attained self-understanding and self-expression, but when he does become articulate a new voice will be heard in our counsels, and a powerful gravitational force towards an efficient democracy will have come into being. Because the Catholic layman and Catholic conceptions of a social system have not come at the first need, we should not conclude that they are never coming. Remember the Catholic laity has been a long time without wider State responsibilities, and a long sleeper takes time to shake off drowsiness. While making every allowance for the evil inheritance of apathy, indifference and dislike of State institutions in any shape or form come to us from

English misrule, the length to which this diseased repulsion to civic duties is carried is a danger to the State. Irish public opinion, which is a reflection of the attitude of the individual, was never so indistinct, so negative. The public seem to have the utmost difficulty in finding an affirmative position on vital issues of policy. The only possible explanation that occurs to my mind is that the Catholic laity are not mentally active in the political sense; that their attitude is one of fatalism; that the political changes have been too great for their habits of mind to grasp as yet; that the orientation to the point of view that treason is not now what it was against an oppressor—a virtue—that it is now a vice, has been all too slow; that in fact our political vocabulary needs complete revision. It has been said that men are very slow to shake themselves free of their intellectual habits. This degree of inadaptability is not surprising. Until the Treaty came into operation the Irish Catholic laity as a whole were denied effective political experience in their own affairs. A subject race is very carefully excluded from the higher spheres of administration by the dominant foreign caste, and though Irish Catholics did make their way at the sacrifice of their principle or as members of an upper Catholic middle-class by-product of the garrison, these were, to the national credit, the exceptional cases.

There were limited possibilities for the able Irish Catholic in the national parties, but not until Arthur Griffith was this experience in any way adequate; and in any case such possibilities were strictly limited by the nature of the political campaign which ranged from passive or parliamentary resistance to the occasional adoption of physical force methods. Much of the cream of the country simply earned their passage to America and emigrated. The Catholic layman in Irish public life was, until 1917, in the circumstances either a recreant, a minor official, an emigrant, or in rebellion against an illegitimate state of Government. Such an environment may stimulate fine virtues of self sacrifice and sincerity but it starves the genius of the creator and social organiser.

There is no need for undue pessimism. We are the victims of circumstances, but we must defeat circumstances. Prophets of disaster are very busy in these, our days. We have been so stunned by the discovery that we are not better than other races that there has been a stampede from national vanity to national cynicism. We have no more original sin in our composition than any others of the sons of Adam, and I suspect a certain perverse satisfaction in this claim to incurable depravity. Our delight in superlatives should be confined within reasonable limits. We have shortcomings, and it is an advantage to recognise them, but our history, particularly within the last year, is the history of every European nation breaking from one mould to another. Re-birth is painful as well as dangerous, but is there any reason why this country should be above taking to mind the experience of other nations—the necessity of discipline in public as in private life? The recognition of the fact that we have been sowing our wild oats altogether too prodigally this last year; a perception of the historical fact that no nation can exceed the limits of its vitality and strength without a terrible reaping of the whirl-wind could even yet retrieve the situation.

A diagnosis of the condition of the country warns us that we are at the end of the tether, and that no time is to be lost in the work of healing. Personally, I

fail to see what gratification the opponents of the established State can get from the prospect of chronic disturbance in the country. It may be the dog in the manger mentality, but pre-supposing that in the next few years these persons were given office by the Electorate they would have in hands a country broken in body and spirit, crippled maybe, for several generations. What political use could be made of a country at its last gasp? The asking of this question raises the question of how the Catholic laity can breathe into the nostrils of an Irish democracy the breath of its powerful though dormant life. Democracy is no talisman against bad government. Democracy is not fool-proof any the more. It does not automatically work out the right solutions. The democracy in Ireland, America, or England is what the sum of the masses of the individuals composing it are, and if the masses are either predominantly wise or stupid or combative or ignorant, so is democracy as a social organism wise, or stupid or combative or ignorant. Now there is no alternative to democracy evolved as yet, and in Ireland we can assume that whatever temporary lapses there may be from the democratic form of Government, our solutions will lie through its medium. The sooner we face the fact that Irish democracy in its present form is backward and must be improved beyond all recognition, the sooner can we sleep with easy minds. A better social organism without the individual improving in social outlook is impossible, and it is here the assistance of the best type of Catholic layman in public and private life is needed. Nor is that need in the abstract. It is an immediate, an imperative need. On all sides in Europe, democracy in all its variants from social democracy to obligarchy is failing before our eyes. Fascism and Bolshevism fight over its prostrate body. The writing is on the wall. European democracy has been already weighed in the balance and found wanting. Disillusioned democracies are battling for alternatives much as an angry wasp battles against the window pane without making a systematic search for a way of escape. Here in Ireland we must solve our problems, not by dint of temper, but by our own brains.

The distinguishing principles of democracy, such as government by consent of the governed and adult suffrage, are but a means of approach to the problems of government. The problems themselves are solved exactly in proportion to the skill, courage, ability and energy of the public men. Apparently democratic public men are not able for their difficulties. Where, for instance, has the labour crux received satisfactory solution! The secret of failure would seem to turn on the fact that no government can rise above the level of its electorate, that politicians are held inexorably in fixed orbits by the central masses, that the intelligence and ideas latent in the electorate determine the standards and powers of the elected. Though sound in principle, this fixed relation of the public man to his electorate shows the necessity of raising their political standards before his can be raised. We are, I think, by no means too self-critical in these remarks. They are universally applicable with very slight variations in the particular case. The Electorates all over Europe paying the piper as they do, have the right to call the tune and so make it a part of the politician's business to play to the gallery in greater or less measure. The average politician will rather flatter the prejudices of the electorate than risk his political career by telling them unpleasant but hard

truths. Who can deny that the demagogue is a much more general type than the matter-of-fact worker and statesman in every Department of public life, be it in the local body or in the State legislature? Now if people combine to select their public men for such incidental political qualities or gifts for the job as a pleasant tenor voice, they can hardly expect that such a careless sort of selection will secure public men able to guide great and intricate political movements. This is "muddling through," but the point is that in the long run they do not "muddle through." If politicians, local, national and international, take the line of least resistance, at some stage a collision takes place. In modern times we disbelieve in these generalisations because we are not attentive enough to political movements to perceive that the drift is not along parallel lines, but at angles which means collision. For another reason, because whereas the monarchies of a hundred years ago rushed at one another periodically with a flourish of trumpets, in our own days nations glide imperceptibly and slowly down an incline to chaos—civil war and international war. The democratic electorate may be a brake on militaristic adventures, but in fact the modern electorate seems rather to slow down the movement than to turn it aside. When the modern collision comes it is more disastrous than a thousand such collisions of a hundred years ago. There is no real provision either in the electorate or in the public men, the truth being that both must have a set of views and convictions in common and that these convictions must be evolved by hard and accurate thinking and then acted upon with courage and energy. Rhetoric and sleight of hand are no substitutes for reasoned aspirations and convictions. Mere pious aspirations are useless without courage. Hell, it is said, is paved with good intentions. In the words of an able critic, whatever we may say to his conclusions: "If despotism failed for want of a benevolent political dictator, what chance has democracy which requires a whole population of capable voters, that is, of political critics, who, if they cannot govern in person for lack of spare energy or specific talent for administration, can at least recognise and appreciate capacity and benevolence in others and so govern through capably benevolent representatives? Where are such voters to be found to-day?"

What are the social principles and convictions behind our Irish democracy? They are not Catholic in the measure to be expected—but an unquestionable admixture of feudalism and brigandage in one quarter, and a deplorable amount of grabber and gombeen morality generally. It is time to be up and doing. If public men are church-goers, excellent in private life, but have no public morality, how is the community to fare? Badly for a certainty. This reflection gets us to the kernel of the question. Are men entitled to insulate their consciences in public life? Are men to have two distinct consciences and keep them in separate and water-tight compartments, one for private and the other for public life? I have always understood Catholicity to be a complete doctrine and rule of life, and this divorce of faith from good works is hardly sound Christianity. The Catholic layman has a social doctrine and he should not leave it behind him in the home or in the Sodality when going to his work. It is worth while, I conceive, concentrating on this particular aspect. The civic sense, the community conscience, is feeble in Ireland. Citizens do not consider that they have concrete duties beyond their

families. They have not the slightest compunction in neglecting their liabilities to the State. A large element of the Catholic laity is more gregarious than social. We cannot forget the numbers of generations of Catholic Irishmen and women who, in their own country, were hewers of wood and drawers of water, and who in the nature of historical reactions became anti-social. The corrective to this anti-social instinct is the thorough appreciation of the Catholic social doctrine. Another form of this anti-social virus is individualism *in excelsis*. It is rather astonishing to find Machiavellianism in politics so popular in a Catholic country like Ireland. We are a people of extremes. The extreme Catholic ascetic ideal of the Trappist monastery oscillates to the extreme of political Machiavellianism, and in between I am afraid there is discernible a margin of Pharisaical worldly wise men who are constantly congratulating themselves on their own perfections, and tell one with an accent of pride that they are non-political and take no interest in politics. Now it is high time for the Catholic layman to break away from both fanaticism and Machiavellianism and to revert to Catholic social doctrine which, on examination, is seen to be the highest and most distinctive social code ever preached. It is a sociological doctrine highly relevant to our needs—teaching an organic conception of society of which we are inseparable members, as truly as the branches of a tree. When the tree flourishes the branches are full of sap and flourish. When the tree withers the branches also die. Isolation and individualism in the diseased form prevalent here are impossible and self destructive. The Nihilism of the individual, who either does not understand or refuses to accept his responsibilities, who outlaws himself, who considers fulness of life is to be found in isolation, is fatal alike to society and to the individual. When a minority sets itself against society sooner or later such antagonism breeds an anarchical temper of mind which is as fatal as in the case of the individual. By bitter experience men find that they cannot, even if they will, be anti-social, that our real security as individuals lies in our social solidarity. There is no alternative but the life of the jungle, *homo homini lupus* and eventual annihilation. Those who reflect on the delicacy and incalculable importance of a healthy social organism will think many times before attacking it in a spirit of vandalism. There should be a definite and feasible alternative; otherwise such an attack is simple Nihilism. It is madness to torpedo the ark when there is not an alternative straw to clutch. It is criminal folly to strangle this infant State. The social doctrine of Christ counsels that you cannot root up the tares without rooting up the wheat. There should be thought and measure in all our acts, public and private. We can make or mar our future, and we must show as Catholics higher qualities of citizenship. There is little point in opposing other religious denominations. Men like Grattan, Davis, O'Leary, Mitchell, were by no means last in the race as Irish public men with a high and valiant social code. The word Catholic signifies, literally, universal, and Catholic and Protestant and Presbyterian are alike Catholic in so far as they give beneficent public service. We can learn from John O'Leary as well as from Pasteur's humanitarian labours. John O'Leary's conviction was that cleanliness in public life was the vital thing, and he applied religion to public life in the maxim that he had but one religion, the old Persian—

“to bend the bow and tell the truth.”

ON DEMOCRACY.

(Vote of thanks to Auditor at a meeting of T.C.D. Historical Society).

MAY I, in the first instance, express my gratitude to the Auditor for his able and painstaking address. He has traced for us through the centuries the growth and development of ideas and principles which to-day underlie the political existence of France and England and America. It is well to be reminded that ideas which form the commonplaces of modern political thought are not from eternity, nor yet the growth of a night, but are the product of revolution and evolution won by the agonies of one generation or by the painful gropings of many.

That the auditor has performed with conspicuous ability and skill the difficult task to which he set himself, will I feel, be generally agreed. Stepping with the ease of familiarity amidst the debris of Empires and autocracies, he has traced the cause, emphasised the significance, and measured the reactions of political movements in many countries and in many ages, the cumulative effect of which has been to present mankind with an almost universally accepted body of political thought.

The subject has a particular interest for Irishmen at the moment. A democratic movement which was a combination of active and passive resistance, resulted in the establishment of a State here in which all real political power is in the hands of the people. Democracy which is accepted as axiomatic elsewhere has been literally a burning question in Ireland in our recent past. We have not yet learned to content ourselves with the doctrine that politically one man is as good as another. We hasten to add that not only is that the case, but in fact one man is considerably better than another provided he has the good fortune to belong to a minority.

I have no doubt that the phase will pass away. It is but a stage in our political education. Here, as elsewhere, we will learn that the alternatives to majority rule and representative Government are tyranny or chaos. When we have cut our wisdom teeth we will realise that Democracy is a balance between varied and sometimes conflicting political ideals, and that it is ill work to upset that balance. Democracy, as the auditor has pointed out, is the way of political evolution. All other ways leave us no better than we were before. Outside the democratic way "plus ça change, plus ça reste la même chose."

To claim that Democracy is a principle of order which exacts its reckoning when it is flouted and overridden is not to claim that the collective judgment of the people is infallible and that democracies cannot err. There are numerous instances, modern instances, to the contrary. The fatalist characteristic of many modern democracies can be traced to this fallacy that democracy is infallible. If there is one characteristic more than another outstanding in modern democratic states, and here under our eyes in Ireland, it is irresponsibility and indifference to public affairs, an indifference so marked that it is not very far removed from fatalism.

This fallacy is not new. Over a hundred years ago the physiocrats, thinking to some extent, along lines parallel to Rousseau and the democratic theorists of the French Revolution period, argued that there were natural laws in politics and

economics and that the function of Government was to protect nature in the working of its laws. No doubt it would be pleasant to feel that no matter what mistakes are made, no matter how reckless or irresponsible we are, an invisible force exists as a *Deus ex machina* to save the situation. This, however, is a dangerous delusion, leading to drift, fatalism, and chaos. The political miracle never happens. It is the worst of all possible investments for a people's thought. Democracy does not fashion its citizens in its own likeness. The exact contrary is the case. The democracy is the image of its citizens, and we in Ireland will project our strength or weakness, our wisdom or folly, into our political democracy. Democracy is not fool-proof.

Perhaps that is why many have lost faith in Democracy. Some complain because it has not brought a millenium. No political system can ever bring a millenium. Let us whisper here the dread fact that the golden age will never return mainly because it never existed. Others despair of Democracy because it did not save Europe in the late world war. It would be more profitable to concentrate on seeing that it saves it in the next. Democracy, after all, is in its infancy, and like infancy, is heir to many ills. There seems to be something in the nature of a grim race between democracy and the multiplication of political problems. Only by thought and prevision can democracy be strengthened and accelerated so as to overtake, keep pace with, and solve these growing problems.

This new-born Irish State believes in Democracy and has uttered its credo in its Constitution, which is in its essence a democratic instrument. Besides incorporating all the accepted sanctions of democratic liberty, the Constitution provides for universal adult suffrage and the modification of the Party System. The auditor has appropriately quoted from the writings of Edmund Burke: "Of this I am certain," he writes, "that in a democracy the majority of the citizens is capable of exercising the most cruel oppression on the minority." We have endeavoured to meet and counter that danger by the adoption of a system of franchise which provides as adequate a representation for minority views as it seems humanly possible to secure. It can be claimed for the movement which has led to the founding of this Irish State that it did not abandon in its day of political power the doctrines which it preached as a minority. It has registered its conviction that the broad democratic way, the way of political evolution, is the only way open to us in Ireland.

While we in Ireland are engaged in laying broad and deep the foundations of a democratic State, on the Continent many peoples are turning in other directions. I am inclined to agree with the auditor that all these other roads—like so many of the roads built by the British in the West of Ireland—while most inviting to the view, come to an end in the middle of a bog.

The outstanding example of a break from democratic methods is, of course, Bolshevik Russia. For the Bolsheviks, democracy is a heresy, and the way of salvation prescribed by them is civil war. The Bolsheviks are hardly good judges of the possibilities of democracy which they have rejected. Russia, after all, under the Czar's regime, had the merest nodding acquaintance with democratic liberties, and even now, despite all Trotsky's polemics, she seems to be reacting from doctrines of civil war and seeking a *via media* in social democracy. Many

people in our time who have lost patience with parliamentary democracy, and who throw it off as worthless, are finding their way slowly but surely back to the belief that to reject democracy even in its worst form is to jump from the frying pan into the fire, that the real problem is to improve democracy rather than to destroy it.

How can this be done? Here in Ireland we have to vindicate the first attributes of formal democracy, such as Majority Rule and Parliamentary Authority before we can even begin to consider the next stage. But what strikes us forcibly in Ireland where we are so busy defining and defending the first elements of democracy is that even where these elements are unchallenged, democracy is not past the danger point. A real centre of equilibrium has not been found.

The democratic *idea* of popular government is older, I think, than the address would suggest. In the Institutes of Justinian there is this rather remarkable passage:—"The will of the Emperor has the force of law, for the people by an enactment called the Lex Hegia grants to him all its authority and power." So that in the sixth century Roman jurists considered the people to be the source of political authority and the course of over a thousand years has enabled us to reduce to practice in the form of representative government the idea of the sovereignty of the people.

But democracy in its widest sense has better and stronger roots than Justinian's Institutes. Equality is the central idea of democracy, and equality is a Christian concept. The spiritual equality of all men led inevitably to the expression of this equality in the social and political order. We might conceive democracy arising out of Christian equality in its three dimensions—in politics, in law, and in social order.

The auditor has very ably traced for us the gradual establishment of political equality in the form of representative government. I question whether he has emphasised sufficiently the decisiveness of the part played by the American and French Revolutionists in working out political democracy. I quite grant that the democratic ideas in themselves were current in England in the time of Cromwell and in the time of John Locke—but the planting of those seeds was done in the American and French Revolutions.

In the beginning of the last century the sovereignty of the people, the authority of parliament, the franchise, equality before the law—in fact all the formal attributes of popular government became the order of the day. In modern times we have brought democracy one step further by broadening its basis in universal adult suffrage. So that the Christian idea of the equality of man has been realised as far as is humanly possible in two of its dimensions, viz., legal and political equality. I do not think that political equality can ever be practised except in the form of representative government. I agree with the auditor that direct democracy, while it may be possible in a community of a few thousand persons, breaks down in practice in a community of millions.

It is at this point we meet the real enigma, the real difficulty in democracy. Popular government is being established all over Europe, equality exists everywhere in its two dimensions of law and politics, and yet democracy is not stable. It has not found a centre of equilibrium. Militarist or Communist wild-goose

chases have started out of a democratic or semi-democratic social order. The secret seems to be that to balance political and legal equality a measure of social equality is essential. Without this the democracy is lopsided and overbalanced itself. This fact seems to be written in capital letters all over the history of Europe since the arrival of popular government generally—since 1800.

While we have before our eyes popular government in its attributes of legal and political equality, we notice the balance shifting as classes differentiate acutely. At first the demarcation of classes does not apparently affect the stability of popular government. Then the classes draw farther apart and finally become polarised at opposite ends of the State in Labour and in Capital. In the tug of war that goes on between Labour and Capital, the State is wrecked.

If we can be quite certain of this consideration we are, I imagine, very close to the real defect in modern democracy. The dictatorship of the proletariat and of the oligarchy becomes easily explicable. One of the polar classes of society—Labour or Capital—seizes power by force, and democracy failing to arbitrate can no longer hold them together. Thence we have all the evils of civil war, and society starts swinging slowly but surely back again towards the democratic method, hoping to discover a centre of gravity in the economic foundations of the State. Some people conceive this movement repeating itself again and again, like systole or diastole, but as we can see from history, the movement does not go on repeating indefinitely, any more than the heart goes on beating indefinitely, because when the heart beats too fast it breaks.

What seems certain about our modern democracy is that it has not realised itself in its third dimension—in the economic and social order, and that until it does democratic States will always be breaking asunder. That is the real problem for believers in democracy. When we have succeeded in applying in some measure equality in the social order as well as in the political and legal order, then will we be in sight of a stable and workable democracy. The alternative is civil war. No State will have entered stable orbit until political and social forces are balanced in some measure.

Democracy, as the auditor has pointed out, is the way of political evolution. As soon as we in Ireland have established a regulated State, when the authority of Parliament and the rule of the majority have been definitely vindicated, we will then be faced with the social and economic problems—the urgent ones.

Perhaps I may be permitted in conclusion to strike something in the nature of a personal note. I am very little older than many who are students here to-night. Fate has placed on some of us burdens and responsibilities beyond our years. That very fact may perhaps be considered as entitling me to appeal to those who are about to start life in the new Ireland to assist in the breaking down of the old barriers and in the healing of the old wounds upon our body politic. If there is to be rivalry henceforth between those who stood for different traditions in the past let it be a healthy rivalry—a rivalry in service to our kind. Let us be neither anglophobes nor anglophiles. Our political centre of gravity lies now within ourselves; our future is in our hands for the making or the breaking.

OUR ECONOMIC PROBLEM.

(From a speech delivered in 1923).

I HAVE said that we have two problems, political, and economic. I propose to finish this rather lengthy diagnosis by a glance at the economic situation. The economic structure in Ireland at present is top-heavy and therefore unsound. A proper equilibrium has not been found since the convulsion occasioned by the world war. I hope to make clear what I mean when I say that the economic structure is top-heavy. The wealth of a country is the sum of its production. About 70 per cent. of the produce of the Free State is agricultural—and this proportion is not likely to be materially altered at least in this generation by anything that we can do. The farmer and the agricultural labourer, therefore, are producing about 70 per cent. of the country's wealth. This means that the distributing trade of the country, the trade of Railways, Shipping Companies, brokers, dealers and other distributors, depends for its existence directly up to 70 per cent. on agricultural production, and the retailers so far as they are not living on capital, depend at least indirectly up to 70 per cent. on agricultural production. That is the outstanding fact of the situation. The economic fabric of the Free State is based on agricultural production. Many people will admit that fact. How many will admit its implications and give the fact and its implications due place in the national economy? Surely the immediate necessity is to establish a just economic relationship between the wages, prices, and profits in agriculture—the industry producing 70 per cent. of the national wealth—and the wages, prices, and profits in these non-productive and distributing trades which to the extent of 70 per cent. are living either directly or indirectly on the wealth-producers—the farmer and his labourer.

Why is it that in Waterford to-day the farmer and his labourer are burning each other out while the rest of the community looks on with varying degrees of equanimity? I am convinced that the explanation lies in the bald fact that both farmer and agricultural labourer alike are being robbed by the rest of the community, and are turning on each other in blind and furious protest against a situation which is rapidly growing intolerable. When I say that the rest of the community is robbing the agricultural producer I mean no more than this—that the rest of the community is claiming and receiving far too high a proportion of the country's wealth.

Let us examine the position of those who jointly produce 70 per cent. of the country's wealth. At the present time the average level of retail prices for the commodities generally required for the maintenance of middle class and working class families is about 80 per cent. above that of 1914. Consider the farmer's position. The average prices which he receives for his produce are at a very liberal estimate between 40 and 50 per cent. over 1914 prices as against a cost of living figure which has increased by 80 per cent. His co-producer—the agricultural labourer—is paid to-day a wage that is about 80 per cent. in excess of what he would have received in 1914, but as the cost of living figure has shown a corresponding and identical increase, there is very little guilt left on the ginger-bread. The bald fact is that the farmer whose overhead charges correspond to the cost

of living is producing at a loss, and the case of the farm labourer is not very much better, and unless there is an immediate change both will go out of production as far as possible. Now remember that the economic structure of the country is based on agriculture. If the producers of 70 per cent. of the country's wealth are driven out of production to any considerable extent it will be a bad day for the distributor and for the country as a whole.

Let us look at the other side of the shield. Take the position in the distributive, retail, and non-productive industries, all of which live either directly or indirectly on the wealth which the farmer and the farm labourer produce. Take first the position of the worker engaged in these trades. His wages are now about three times what they were in 1914, while the cost of living figure has not quite doubled; that is to say his wages show an increase over pre-war rates, after allowing for the variation in the cost of living of over 100 per cent. The position then is that the labour-producer is working at something like pre-war rates, allowing for cost of living, while the labour distributor is working at something like 100 per cent. over pre-war rates after allowing for cost of living.

Take now the employer in the retail and distributive trade. What are his prices? Something about 50 per cent. in excess of 1914 prices as compared with the farmer's increase of 40 per cent. What are his profits? One cannot say definitely at the moment, but beyond question it will be necessary to find out. In any event we do know the prices both for the agricultural producer and distributor. We know the wages for both, and we know that while the agricultural producers—the producers of 70 per cent. of the country's wealth—are working far below the cost of living figure, the distributors are working far above it. That is the present position. It is fundamentally unsound. It cannot obtain much longer. If it does the farmer will be driven out of production, and if and when that happens the distributors of the country—I include both the employers and labourers—will learn in a very real and in a very bitter way that they have been living on the farmer—living by skinning him.

That is the economic condition as it appears to me. What is the solution? There is only one solution. Agricultural conditions must be toned up. Wages, prices, and profits in the non-productive and distributive trades must be brought into a fairer relationship with agricultural conditions, that is to say, with the conditions of the men, employers and employees, who are the producers of three-fourths of the real wealth of the country. That is the real lesson to be drawn from the Waterford situation. Farmer and farm-labourer alike are but the victims of an economic situation which is essentially unsound. It is an irony that the victims are attacking each other.

I have attempted to give an honest survey of the problems that confront the people and their Government. To some that survey may seem depressing. But each and every one of these problems admits of satisfactory solution if there is strength and capacity and definite purpose in the Government and a sober, civic sense amongst the people. I take it that the day is past when people come to a meeting such as this to have their own ears tickled with soothing platitudes. The people have not only the right, but the duty of knowing and judging for themselves, their national position. In what I have said I have endeavoured to give

at least the main outlines of the situation in which we find ourselves to-day. If I have departed in any particular from the realities, the departure has been unintentional and certainly not due to any desire to present the situation otherwise than as it appears to me. Personally I am not pessimistic.

If the people hold fast to one guiding principle they will weather any storms that may befall. Now and always they must govern themselves through their representatives, shape their own policy, mould their own identity, regulate their own progress and development. The only alternative to majority rule is, as I have said, tyranny or chaos. That principle of democracy and responsible Government has been sorely challenged and has been vindicated at great cost. From whatever quarters a challenge to that principle emanates in the future the people should be ready and willing to meet it. They should be jealous of their sovereignty.

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Salary £150, rising by £7 10s. 0d. per annum to £240 per annum, plus cost of living bonus. Previous experience essential. Age limits 26 to 50 years.

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SOME THEORETICAL ASPECTS OF SOUND-RANGING.

By CAPT. A. J. QUIRKE.

CREDIT for the development of sound-ranging as a practical means of locating hostile gun-positions belongs, in the first instance, to France, for it was entirely due to French enterprise that the first sets of sound-ranging apparatus were put into commission upon the Western front, where, during the winter of 1915-1916, they sprang into favour for counter-battery work, especially during periods of indifferent visibility, when the difficulties of range-taking by other methods became accentuated.

But it was only when the French initiated the practice of utilising data obtained from the sound-ranger for the purpose of interpreting air photographs, that the utility of the former became most markedly apparent. Hitherto the efficiency of German methods of gun-camouflage had added considerably to the difficulty of finding the positions of gun-pits from photographs taken from the air; furthermore, such photographs offered, for the most part, no very certain indications as to whether a given gun-position was occupied or abandoned.

In instances such as this, the sound-ranger proved an invaluable aid, for the locations given by sound-ranging sets frequently enabled well-concealed battery positions, previously overlooked on air photographs, to be rapidly detected. Similarly, the enemy not infrequently prepared a whole series of dummy gun positions disposed about an active gun at various points within a radius of three or four hundred yards. Air photographs of areas thus camouflaged invariably proved so difficult of interpretation that it was only with the aid of the sound-ranger that targets could be picked out with anything approaching certainty.

Apart from all this, although air photographs afforded a valuable means of checking the results obtained by sound-ranging methods, it should be borne in mind that the latter methods can be, and frequently were, employed independent of any confirmation from aerial photography.

Sound-ranging works with equal efficiency, day or night. Periods of poor visibility, whether owing to rain, fog, mist, gas-haze, or smoke screens, in no way interfere with its efficiency; once installed, the apparatus is always ready for action, and under favourable conditions provides a means of determining the location of an enemy artillery unit two or three minutes after the latter has discharged a gun.

As against all this, the preparation of such a sound-ranging post calls for a very considerable amount of preliminary labour, involving, as it does, the laying of several miles of wire, and the accurate surveying, preparation, and concealment of upwards of half a dozen "sound posts." Again, sound-ranging methods will obviously yield little or no useful data during periods of heavy bombardment.

For the purpose of the present article it is hardly necessary to dwell further upon the early history of sound-ranging, interesting though the topic may be. Before passing on to consider the purely theoretical aspects of sound-ranging, quite a number of other matters require a certain amount of preliminary explana-

tion. Thus, we need to know something of the various types of instrument used; how exactly these instruments are employed; and upon what principles their functioning depends.

We have all at one time or another been compelled to accept as a dogma of physical science the statement that sound travels at the rate of 1,100 feet per second.*

Assuming, therefore, that sound, travelling uniformly at a rate of 1,100 f.p.s., radiates in an ever-widening circle from its point of origin, it is perfectly clear that, if steps be taken to record the instant of arrival of the sound at a number of selected and carefully surveyed posts, it should be possible, by subsequently comparing these records, to determine the point of origin of the sound. For the purpose of obtaining practical results by this method, it therefore follows that we will require:

1. Apparatus for recording the time-intervals separating the instants of arrival of the sound at a number of fixed posts.
2. An accurate mathematical process for determining the location of the target in the light of the information gleaned from the sound-ranging apparatus.

Examining our requirements under the head of "apparatus," we find that these will include:

1. A series of sound-sensitive instruments, placed one at each of the selected posts, and designed so as to give an electrical response to the arrival of the sound-wave;
2. A recording instrument, electrically connected with each of the sound-detectors above mentioned, and which is capable of maintaining an accurate comparative record of the instant at which each of the detectors responds to a sound-impulse.

In its most elementary form, such an installation might well be composed of:

- (a) A series of "buzzers," each located at one of the selected sound posts, electrically connected to a central "exchange," and each manned by an operator who instantly depressed the buzzer key upon hearing the sound of the looked-for piece;
- (b) A central "exchange," provided with a number of operators, one for each sound-post, and equipped with a number of synchronised stop-watches, each of which would be stopped by an operator upon getting the buzzer signal from his "opposite number" at the distant sound-post.

As a matter of fact, the first sound-ranging sets were operated pretty much upon this principle. When the method was originally tried out by the French, each sound-post was furnished with a "detector," in the shape of a soldier who pressed a key as soon as the awaited sound-wave reached his ear. The depression of this key closed an electrical circuit which in turn actuated an electro-magnet at the central station, the latter operating a pen which finally recorded a trace upon a moving, smoked-paper reel. The principle of the operation of this

*In this connection it may be of interest to note that recent research has placed the velocity of sound at a figure somewhat below 1,100 f.p.s.

latter portion of the mechanism will be perfectly clear to anybody who has ever noticed the barometric pressure-recording instruments so familiar in the shop windows of optical instrument makers.

The foregoing method of sound-ranging, while possessing the very obvious merit of simplicity, was nevertheless open to the gravest objection in view of the fact that it introduced inevitable errors, since it placed too much reliance upon the human element as represented by the observers. As one seldom, if ever, encounters two men the speeds of whose reflex actions are precisely similar, it follows that any sound-ranging system depending upon the personal equations of a number of observers is foredoomed from the start. Accordingly, it is not surprising to find that the French discarded this method at an early stage of their experiments, their observers being replaced by a number of microphones. One of these was installed at each post, being connected in series with a few dry cells, and the primary winding of a transformer, the secondary of which was included in the circuit back to the recorder, the latter system acting as a sort of relay circuit.

While the utilisation of these microphones marked a distinct advance in constructional efficiency, they by no means represented finality of design, for they in turn revealed the possession of another serious shortcoming. The modified apparatus suffered greatly from the circumstance that the microphones responded to precisely the same range of sound frequencies as the human ear. In other words, they faithfully recorded any and every chance sound which happened to reach the instrument, whereas what was required was an instrument which gave a comparatively high factor of amplification to those sounds which lay upon the lowest portion of the scale of audible frequencies.

This difficulty was in turn overcome through the ingenuity of a British officer, Major W. S. Tucker, who, in 1916, patented and introduced a hot-wire microphone.

The Tucker Microphone depends for its functioning upon the principle that if a length of high-resistance wire be heated to a glow by an electric current, the slightest motion or vibration of the surrounding atmosphere will instantly induce considerable fluctuations in the electrical resistance of the wire. In the case of the Tucker microphone, the hot wire takes the form of a fine platinum filament mounted in the position usually occupied by the diaphragm of a normal instrument, and arranged in the zig-zag triangulated fashion which has since become so popular a feature of thermionic valve-filament construction. The remainder of the microphone consists essentially of a large air container, or sound-box, this being provided at the sides with slots so adjustable as to afford a considerable degree of control over resonance and echo effects—a very important detail, and one upon which the efficiency of the microphone largely depends.

Simultaneously with the evolution of the hot-wire microphone, a greatly improved form of recording apparatus made its appearance, credit for this further development falling to a Frenchman, Dr. Bull, of Paris.

The actuating mechanism of this new device consisted of a group of galvanometers, each electrically connected with one or other of the distant sound-posts, and each actuated by the fluctuations in current generated in the hot-wire microphone by the gun-wave. In an instrument such as this it is essential, of course,

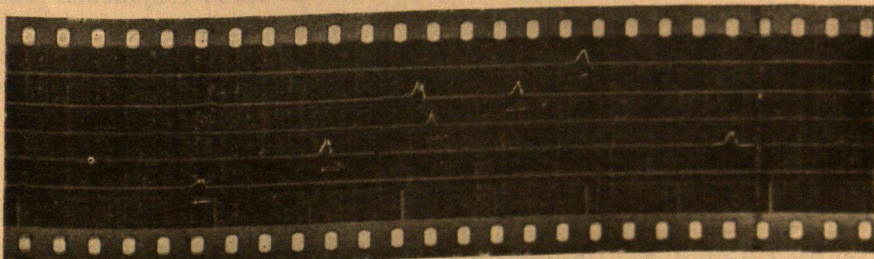
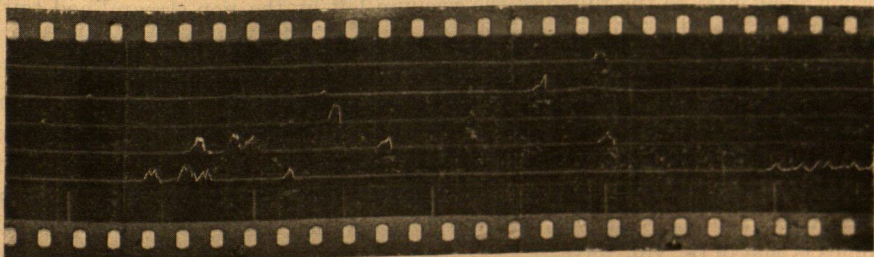
that time-lag be reduced to an absolute minimum. Hence, galvanometers of the moving coil or moving iron types possessing, as they do, moving parts of considerable bulk, had to be discarded in favour of the moving-wire type which, though in some respects inferior to a moving-coil instrument, has at least the merit of exceptionally light vibrating portions, with a consequent minimisation of time-lag.

The Bull apparatus, therefore, employs moving wire galvanometers, these instruments, usually six in number, being suspended side by side, and all within the field of a single electro-magnet. As each of the moving wires is fitted with a separate pair of terminals, there is thus provided within a minimum of space what may be described as a family of six independent instruments, each linked to its own hot-wire microphone.

Original as the galvanometer portion of the apparatus may seem, the recording portion of the instrument is even more ingenious, every vibration of each galvanometer being registered upon a moving photographic film. To enter into a detailed description of this side of the apparatus is hardly desirable in an article of the present size, so it will suffice to observe that the galvanometer vibrations are recorded by a device which is to all intents and purposes a tiny cinematograph camera, save, of course, that in the present instance no automatic shutter device is used. The film is passed through the instrument at a predetermined speed, being automatically "gridded" during its passage into tiny spaces, each denoting the hundredth of a second, while in some of the later instruments the process is completed by feeding the film into an automatic developing and fixing tank.

The photograph in Plate I. shows two sections of film "record" taken

PLATE 1.



The film from which these photographs were taken was very courteously placed at my disposal by Capt. Mew, Director, Ordnance Survey Department, Phoenix Park.

with the Bull apparatus. Each horizontal line represents the trace left by one of the moving wire galvanometers, while the instant at which the sound-wave of a gun reached each microphone is indicated by a sudden "ripple" in the line.

So much for the actual instruments and the work they do. It is now necessary to return to the theoretical side of sound-ranging in order to examine certain peculiarities relating to the sounds created by the discharge of a modern heavy gun.

So far we have taken it for granted that such a sound radiates at a uniform rate in all directions from the gun-pit. In so far as it goes, this assumption is correct, but in practice, unfortunately, the problem becomes much more involved. The first disturbing factor arises from the fact that in the case of the modern field piece with its high muzzle velocity, the firing of the gun is accompanied by two distinct sounds—or rather, by three, if we wish to include the sound caused by the subsequent burst of the projectile.

To begin with, there is the sound created by the explosion of the propellant charge and the expulsion of the projectile from the barrel. This sound we may term the "gun-wave." There is, however, a second sound, caused not by the piece itself, but by the rapid motion of the projectile through the air. This second sound (which must not be confused with the "whine" of a passing shell) is audible to the observer situated on or near the line of fire of the gun as a sharp crack as clear-cut as that of a rifle shot. The generally accepted explanation of this phenomenon is to the effect that the sound is caused by a violent pulse of air at high pressure, set up immediately before the nose of the advancing shell. That such centres of ultra-high pressure do exist has been proved conclusively from high-speed photographs of bullets in full flight. At the same time, the writer suggests that the sound might very possibly be caused by the violent air concussion incidental to the filling of the vacuum left by the non-streamlined tail of the projectile.

Whichever explanation commends itself to the reader, the fact remains that this "shell-wave," as the second sound is called, can, to the ear of an untrained observer, be easily mistaken for that of the gun wave. The matter is further complicated by the circumstances that the hot-wire microphone is sensitive to both "gun" wave and "shell" wave. As a result, each trace upon our Bull apparatus record shows two ripples, and the question then arises: Which of these two ripples is that of the gun-wave?

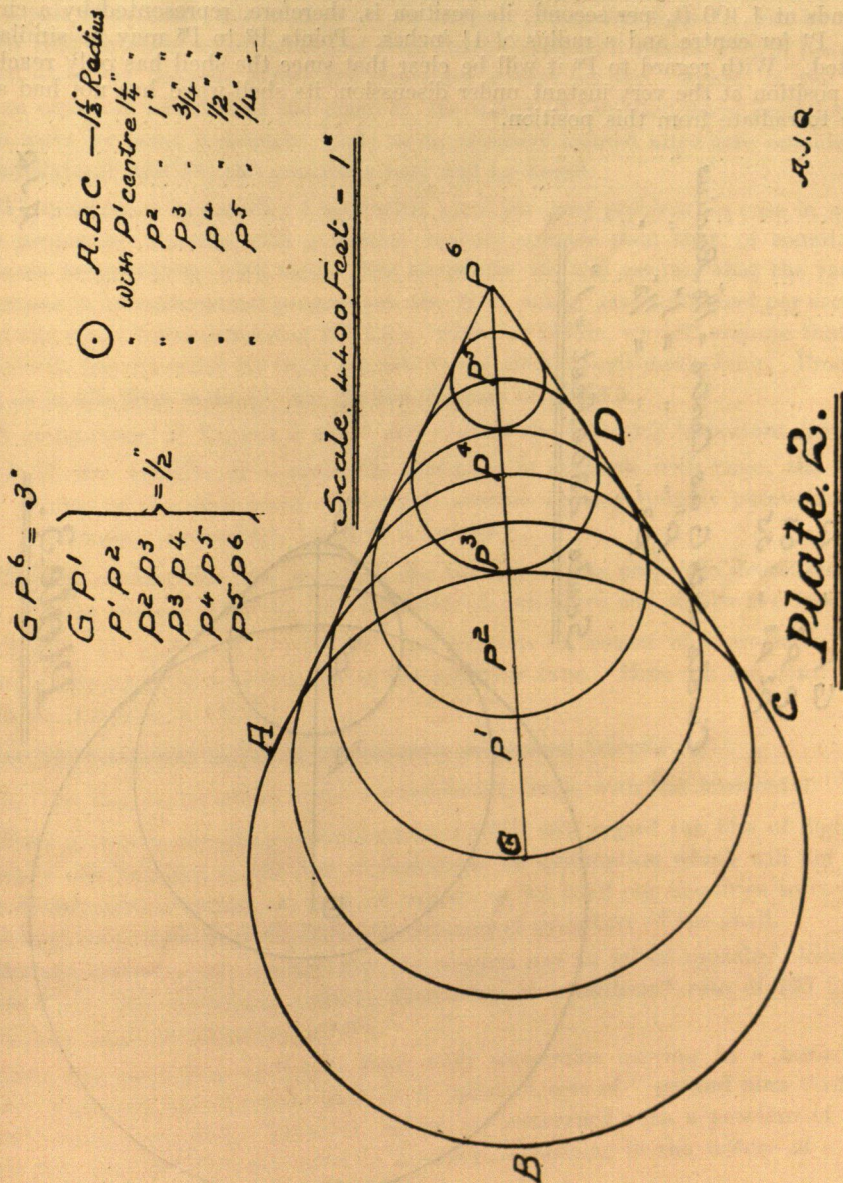
The analysis of one or two typical instances carried out in conjunction with a little mechanical drawing, will materially help to clear up this point.

To begin with, we will take the case of a projectile fired from a gun at a muzzle velocity of 2,200 feet per second, and in order to simplify the matter at the outset, we will further assume:

- (1) That the shell is fired in still air,
- (2) That it moves, not at a constantly decreasing velocity, but at a uniform rate,
- (3) That its trajectory, instead of being a curve, is a straight and perfectly horizontal line.

We will now complete a scale drawing (Plate 2) showing what has happened at the end of six seconds, taking for our purpose a scale of 4,400 feet=1 inch.

Representing the position of the gun as G, we proceed to draw from it a horizontal line, marking off thereon at half-inch intervals six points, P¹, P², P³, P⁴, P⁵,



P⁶. P¹, therefore, represents the position of the shell one second after firing; P² represents its location after two seconds, and so on. Now, by the time the shell reaches P⁶, the gun-wave, starting from G has already radiated for 6 seconds at a known rate of 1,100 feet per second. The gun-wave has, therefore, reached a position represented by a circle with G as centre, and $1\frac{1}{2}$ ins. radius. This circle,

however, also represents the position now reached by that portion of the shell-wave generated at the instant the projectile left the gun. Taking the point P^1 , we know that during the flight of the shell from P^1 to P^6 , five seconds have elapsed, and the shell-wave generated as the projectile passed P^1 has been radiating for 5 seconds at 1,100 ft. per second; its position is, therefore, represented by a circle with P^1 for centre and a radius of $1\frac{1}{2}$ inches. Points P^2 to P^5 may be similarly treated. With regard to P^6 it will be clear that since the shell has only reached this position at the very instant under discussion, its shell-wave has not had any time to radiate from this position.*

$$\begin{aligned} GP^1 &= 75'' \\ P^1P^2 &= 65'' \\ P^2P^3 &= 55'' \end{aligned}$$

Circle with G as Centre = $1\frac{1}{2}$ Radius
 P^1 " " = $1''$ "
 P^2 " " = $\frac{1}{2}''$ "

Scale 2200 Feet = 1''

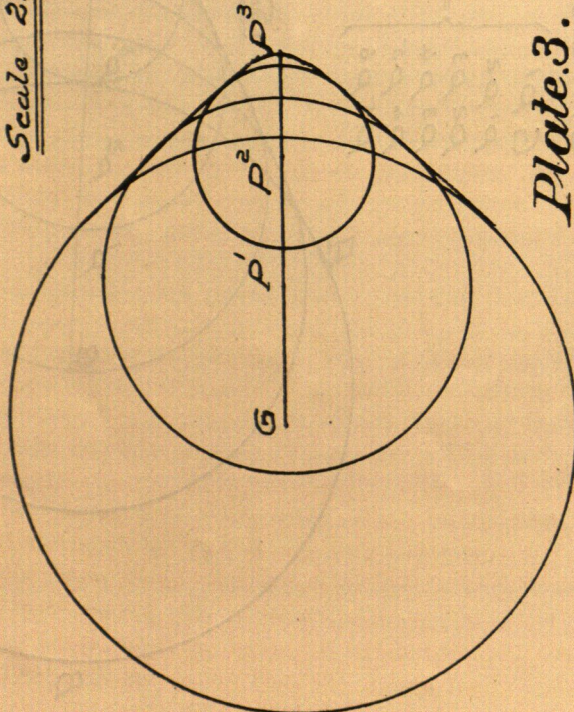


Plate.3.

A.J.Q.

*It should, of course, be noted that since sound radiates in all directions, such shell-wave positions are more correctly represented by spheres—or rather by hemispheres, when the sound originates at ground level. Consequently, Plates 2 and 3 are really best regarded as horizontal sections through the several waves, the writer having deliberately chosen this form of illustration to avoid the introduction of solid geometry with its attendant complications. Consequently, the term "circle," is loosely used for "sphere," and "triangle" for "cone," etc.

It will now be seen that while the circle ABC represents the outer limit of the gun-wave, the outer limit of the shell-wave at the same instant is the figure ABCDP⁶ composed of the above circle plus the figure formed by drawing from P⁶ a pair of tangents common to all six circles. From this figure it will be quite clear that an observer situated just beneath the shell as it passes P⁶ will hear the shell-wave six seconds before the gun-wave strikes his ear. Again, in the case of an observer situated at the point D, the sound of the shell-wave precedes the gun-wave by some 3 seconds, while to an observer located anywhere outside the quadrilateral AGCP⁶, the gun-wave only will be heard.

We next come to consider a somewhat more involved problem—a case in which the projectile, starting with a muzzle velocity greater than that of sound, decreases progressively with time. For simplicity we will assume that the rate of decrease is in arithmetical progression, the M.V. being, say, 1,650 feet per second, and the rate of decrease being 220 f.p.s., while, as before, we will assume that the projectile has travelled for three seconds in a perfectly horizontal plane. Proceeding as in the first instance, we get the diagram of Plate 3.

A comparison of Figures 2 and 3 now reveals the following important facts:—

- (1) If the velocity of a projectile continues to decrease with time, the outer limit of the shell-wave will tend to assume a shape roughly parabolic, and becoming increasingly blunt as it increases;
- (2) The greater the rate at which the velocity of the projectile decreases, the more sharply does the interval between gun-wave and shell-wave lessen.

Finally, we will need to consider what happens in respect of a projectile fired from a curved-trajectory weapon of the howitzer type. Here we are confronted with an instance in which:

- (a) The projectile moves at a constantly decreasing velocity;
- (b) The line of departure forms a considerable angle with the horizontal.

With a view to avoiding complications we will still regard the line of flight as being a continuation of the line of departure, an assumption which will not give rise to any serious errors, so long, of course, as we limit our enquiries to cover a period of, say, three seconds from the moment of departure of the shell.

For the rest, we will assume that the weapon has an initial muzzle velocity of 1,500 f.p.s., the remaining velocity decreasing at a uniform* rate of 100 f.p.s., while the angle of departure is 60°.

Since the preceding examples dealt with projectiles moving in a horizontal plane, Figures 2 and 3 represented, so to speak, a sort of "ground plan" of the sound-waves generated. However, as we are concerned with a problem of high angle fire, our diagram will need to resemble something in the nature of a vertical section of the gun and shell-waves.

In the resultant diagram (Figure 4) point G indicates the gun position, the line GA representing the ground line, and the points P¹, P² and P³, the positions of

*In practice the rate of decrease is never uniform.

the projectile at the end of one, two, and three seconds respectively. The diagram may now be completed in the usual way, a perpendicular line being also drawn from the point P^3 to GA.

Examining the finished diagram, the first circumstance which strikes us is that to an observer situated upon the line GA no shell-wave is heard, even though the velocity of the projectile is greater than that of sound, and despite the fact that the shell passes directly overhead. This will readily be understood, however, when we take into consideration the fact that though the shell has during three seconds travelled 4,200 feet upon its trajectory, the amount of its forward progress towards its objective is roughly half that distance, and its rate of forward progress certainly much less than that of the velocity of sound.

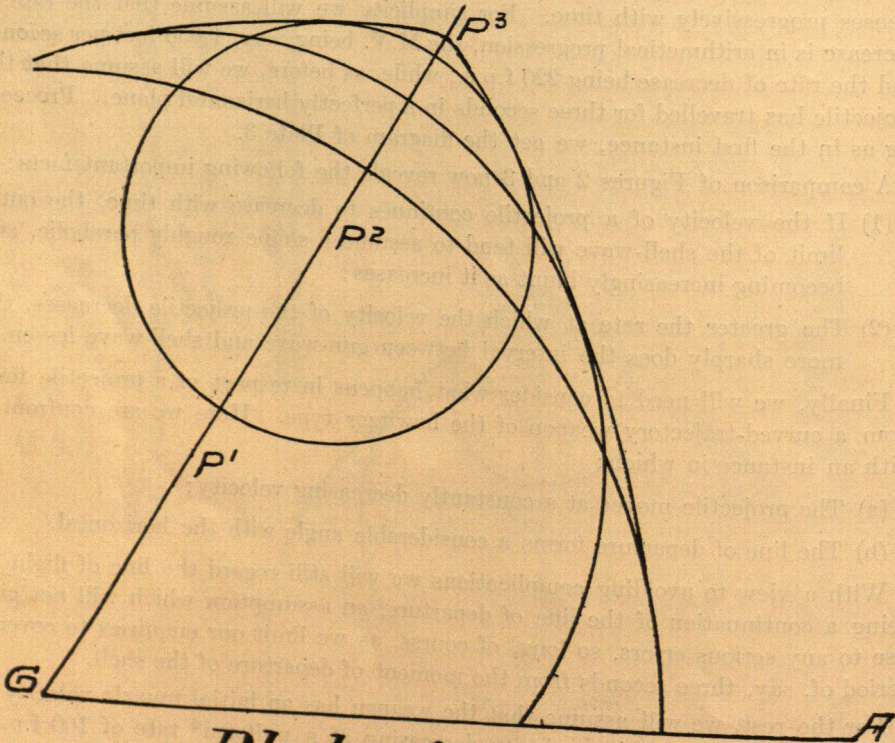


Plate. 4

It will be equally clear that while the ground observer will hear no shell-wave, both shell and gun waves will be clearly audible to a listener stationed in an observation balloon at a point anywhere near the path of the projectile.

Finally, the diagram of Figure 5 (which is self-explanatory) shows how the rate of radiation of gun and shell-waves at ground level is modified according as the elevation of the piece is increased.

The foregoing notes are by no means comprehensive, and must not be taken as presenting anything in the nature of an exhaustive survey of the technicalities incidental to the interpretation of films from the Bull apparatus. At the same time,

enough has been said to make it clear that the interpretation of these records is a task which must of necessity devolve upon specialist personnel.

The next point for our consideration concerns the manner in which records taken from the Bull apparatus can be utilised to determine the position of a hostile gun.

At a casual glance such a problem might appear to be a comparatively simple one, involving nothing beyond the exercise of a little arithmetical knowledge, supplemented perhaps by a few tentative compass-tracings upon a large-scale map. Actually the task is somewhat more involved.

By way of a beginning, let us take the case of a hostile gun, the sound of which is heard at two points, A and B, situated one and a quarter miles apart, the gun-wave of the piece reaching B 1.2 second after it has been heard at A.

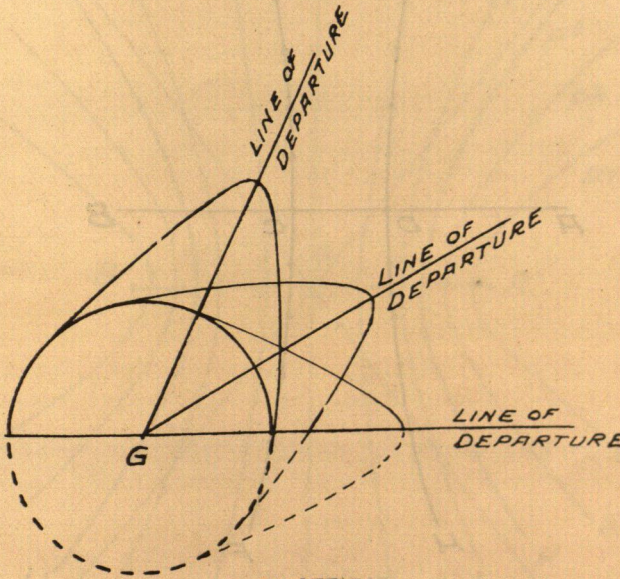


PLATE 5.

Accepting the velocity of sound as 1,100 f.p.s., we may at once proceed to re-write the problem as follows:—

“If a point A be situated at 2200^x from B, find a point which is 1,320 ft. nearer to A than to B.”

A moment's reflection will suffice to show that the number of points satisfying the given conditions is not one but legion, with the result that our problem undergoes yet another modification. We now need to find the *locus* of a point 4,400 feet nearer A than B.

The most convenient method of determining this locus will be by resorting to the drawing-board. Taking a scale of 2 ins. to the mile, we accordingly plot the points A and B $2\frac{1}{2}$ ins. apart. Every point upon the required locus will, therefore, need to be $\frac{1}{2}$ ins. nearer to A than to B.

From the diagram of Figure 6 the remaining stages of the construction should be obvious, the heavy black curve representing the locus of the point in question. It remains to analyse the peculiarities and properties of this curve.

Those of my readers who by force or cajolery have ever been induced to probe into the niceties of Conic Sections will have no difficulty in recognising the curve for a hyperbola, or rather, for what may be termed the positive half of a hyperbola, the negative half of which is the curve GDH.*

The fact that this locus is a curve and not a straight line may tend to confuse

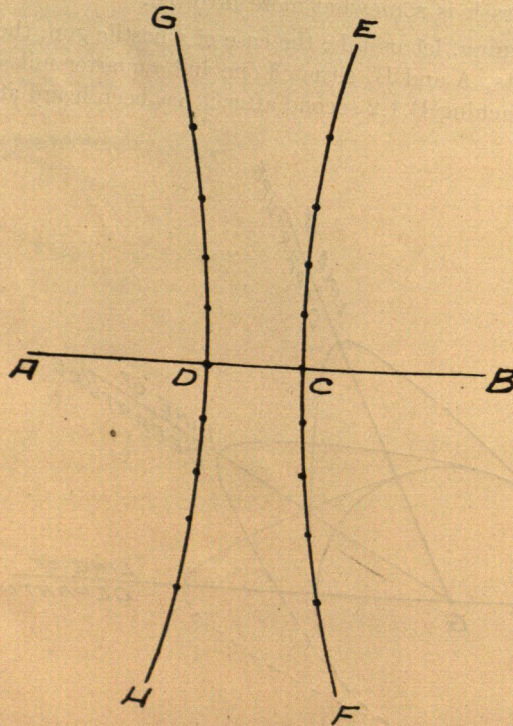


PLATE 6.

the minds of many readers, who very rightly point to the circumstance that the locus of a point equidistant from the two given points is a perpendicular bisecting the straight line adjoining these two points.

Figure 7 will help to remove this apparent contradiction. Here we have a family of hyperbolic curves, all of which possess a common pair of foci, A and B. In the case of the first curve, CP¹D, the difference between the radii vectors AP¹ and BP¹ amounts to $1\frac{1}{2}$ inches. The radii vectors of EP²F differ by $1\frac{1}{2}$ inches, while in the case of the curves GP³H, KP⁴L, and MP⁵N, this difference decreases until in the latter case it amounts to $\frac{1}{2}$ in. In the case of the line

*The complete hyperbola would be the practical answer to the problem:—
"Find the locus of a point P, so situated with respect to A and B that the difference between AP and BP is 1,320 ft., AB being 2,200 yards long."

Actually, the curve GDH is the locus of a point which is "minus 4,400 ft. nearer A than B."

POQ, the difference is, of course, nil. Simultaneously with this decrease it will be observed that the curves appear to become more and more blunt until, in the case of POQ, a perfectly straight line results, after which, as in the case of the line RS, a curvature again manifests itself, the radii vectores revolving about the "B" focus now being the smaller. All of which would seem to support the contention that a straight line is after all nothing more than a particular kind of curve!

In the case of a hyperbola it is obviously out of the question to reproduce upon paper more than a fragment of either constituent curve: as a matter of fact, no

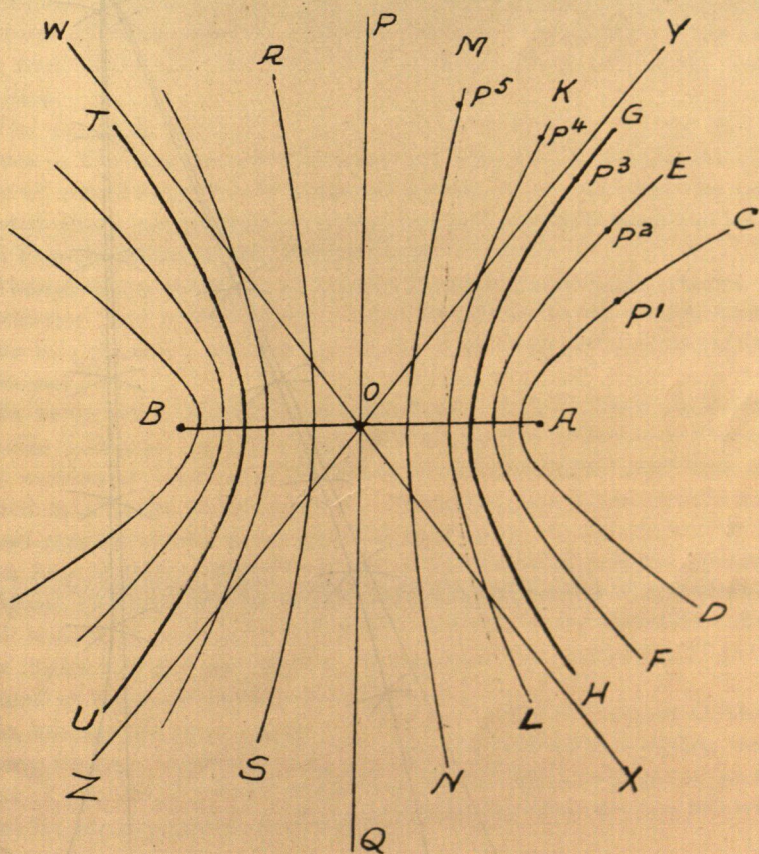
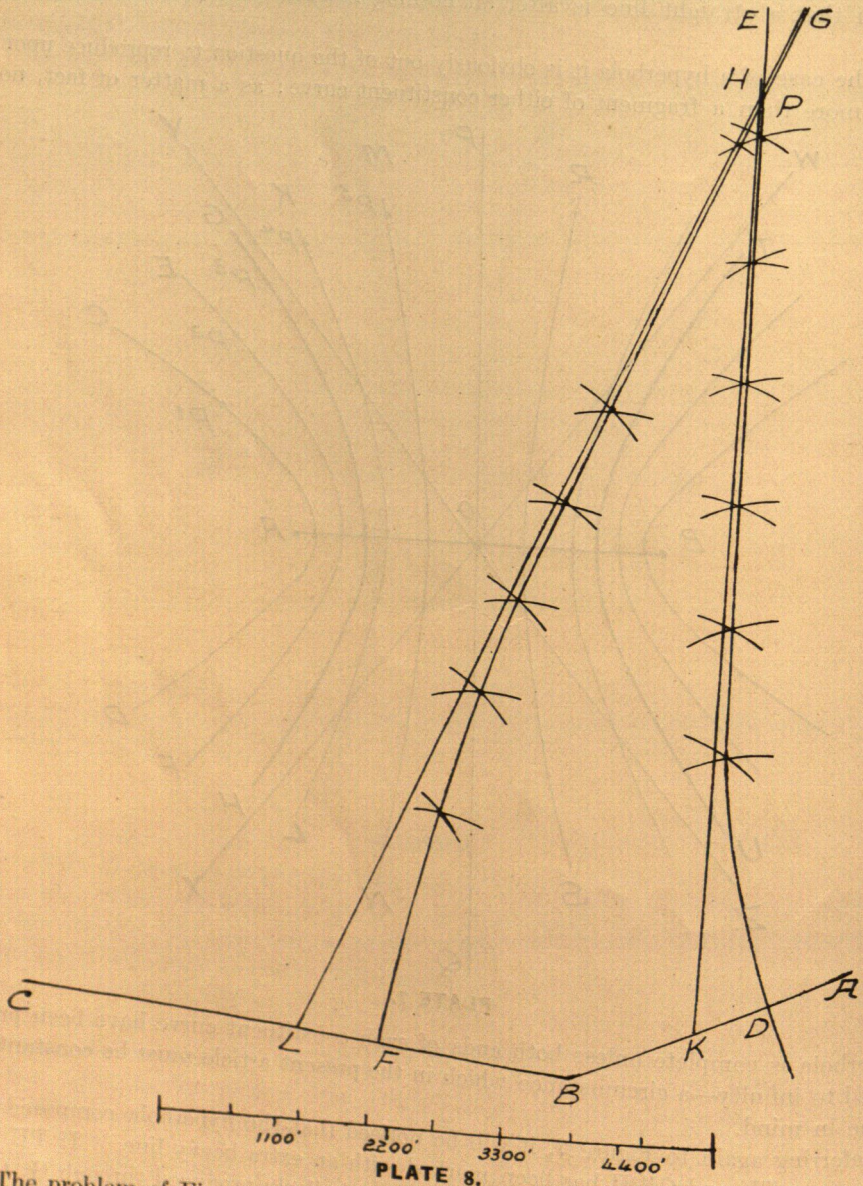


PLATE 7.

hyperbola is complete unless both ends of each constituent curve have been produced to infinity—a circumstance which in the present article must be constantly borne in mind.

Referring again to Figure 7, it will be noticed that the hyperbola composed of the curves TU and GP³H has been marked with an extra heavy line. If TU be produced indefinitely through U, and GP³H be similarly produced through G, the line joining the points at which both curves meet infinity is known as an asymptote of the curve. Since a hyperbola meets infinity at four points it therefore

always possesses two asymptotes. In the geometric analysis of the hyperbola these two lines are of the utmost importance. However, for our immediate purpose it will suffice to note one important fact; to wit, that the line joining the foci of a hyperbola is bisected by its asymptotes. In Figure 7 the lines WX and YZ are the asymptotes of the hyperbola TU-GP₃H.



The problem of Figure 8 provides a good example of the manner in which the foregoing principle is utilised to locate a hostile piece, the gun-wave of which has already been recorded by the Bull apparatus.

In this case we have three sound-posts, A, B, and C. The distance between A and B has been fixed at 880 yards, while C is exactly a mile from B. The gun-wave of an enemy piece reaches B one second after it has been heard at A, and is recorded at C $1\frac{1}{6}$ seconds after it has reached B.

Commencing with the sound-posts A and B, it is quite clear that the source of the sound must be located at a point 1,100 feet nearer to A than to B. Hence, if we plot a hyperbola having for its foci A and B, and such that the radius vector pivoted upon A is invariably 1,100 feet shorter than the radius vector of B, the resultant curve, DPE, must necessarily pass through the point required.

Similarly, taking points B and C, we proceed to construct a hyperbola the radii vectores of which differ by 1,760 feet, ultimately producing a fresh curve cutting the first at the point P. This latter is, therefore, the site of the looked-for gun position.

The preceding example possesses a dual significance. In the first instance it serves to illustrate the principle underlying what may be termed the mathematical side of sound-ranging. More important still is the fact that the methods illustrated above are precisely the same as those originally employed by the British and French armies on the Western Front.

Though these methods were never subsequently radically altered, cumulative experience soon pointed to the advisability of introducing certain minor modifications in procedure, all of which aimed at speeding up and simplifying the final processes.

To begin with, it was found that though in theory three sound-posts should provide sufficient data for sound-ranging purposes, it turned out in practise that any accidental selection of the record of an extraneous sound from one post resulted in a totally incorrect result. To obviate this it was decided to serve each sound-ranging station by no less than six sound-posts, though records from five or even four of these normally met the requirements of a skilled operator.

Again, the necessity for plotting and drawing a series of hyperbolic curves for each individual problem soon became a bug-bear to the operators. Eventually it was decided to try the effect of working from the asymptotes of the hyperbolae instead of from the curves themselves.

As has already been pointed out, the asymptotes of a hyperbola bisect the line joining its foci. Consequently, it followed that if the line joining the map positions of two sound posts were bisected, the resultant point would be the starting point for the asymptotes of all hyperbolae plotted from the time intervals between these posts.

In order to give effect to this modification each sound-ranging station was provided with a map of its area rigidly mounted upon a drawing-board, the map itself being carefully gridded and marked with the exact location of its "affiliated" sound posts. Along the margins were plotted a series of somewhat elaborate sound scales, one for each pair of posts, each scale being expressed in terms of time intervals. At the mid-point of the line joining each pair of posts was fixed a pin to which was attached a length of thread.

When, for example, it was required to find the asymptote to the hyperbola giving the locus of a point 1,100 feet nearer sound-post A than sound-post B, the

operator took the thread attached to the mid point of AB and stretched it taut, so that it passed through the "1-second" graduation upon the marginal scale appropriate to AB. The thread then represented the asymptote required. This procedure of relying upon the asymptotes instead of the curves themselves naturally introduced appreciable errors, since it is only at infinity that asymptote and curve coincide. Furthermore, the more nearly the base-line is approached, the more serious does this divergence become. To compensate for this, a series of correctional tables, expressing each correction as a function of the length of the base-line and of the distance from its middle point, was prepared, these corrections being added to the time-intervals obtained from the Bull apparatus. Finally, it was necessary to employ further correctional tables to compensate for varying wind-velocities and temperatures.

One of the first points which strike one with regard to these modifications is the fact that, although when once prepared these special scales and series of tabulations are of material help in speeding-up calculations, they nevertheless possess the drawback that their preparation involves labour, and takes a certain amount of time, a fact which tends to greatly circumscribe the scope of range-finding in mobile warfare.

Again, the employment of a system which involves the correction of admittedly approximate figures by the use of series upon series of tabulations of an equally approximate nature is far from ideal.

Some months ago the writer became interested in the possibilities of establishing sound-locations by means of the geometry of the straight line and circle only. As a result of these investigations the following alternative method of solution is put forward as being of some little interest.

In the accompanying diagram, drawn to a scale of $\frac{1}{24000}$ A, B, and C are three microphone posts, A and B recording a gun-wave .6 second and 1.36 seconds respectively after it has reached C.

The distance covered by a sound-wave in .6 second would be represented by .33 ins. upon a map drawn to a scale of $\frac{1}{24000}$. Similarly, the distance covered by a sound in 1.36 seconds would be represented by $\frac{3}{4}$ ins.*

Now, if with A as centre, we describe a circle of .33 ins. radius, and if from B we describe a circle of .75 ins. it follows that the required point is the centre of a circle which passes through C and touches the two circles already drawn.

Accordingly, we join A and B, cutting both circles in E and F, and produce this line through A, next drawing the common tangent LN and producing this to cut AB produced in D. Join DC and produce this line through C. Through CFE describe a circle. Produce the common chord FN through N, meeting DC produced at H. On HB describe a semi-circle cutting the circle NFL at K. Through C, K and G describe a circle, marking its centre with the letter P. P is the required gun-position.

The proof of this construction, which, by the way, is quite interesting, may serve to while away a leisured hour for the geometrically inclined. It may help to know that a little "proof construction" is required.

This alternative solution is put forward as a matter of interest, and nothing

*More accurately $\frac{3}{4}$ in. is the map equivalent of a sound-interval of 1.36.

could be further from the writer's thoughts than to urge the claims of this latter method as being invariably and inevitably superior to the procedure previously outlined.

Certainly there are good grounds for arguing that, given due discrimination in the preliminary location of one's sound-posts—and assuming that these are so positioned with regard to the area under surveillance as to permit of a fair margin of accuracy in the subsequent mechanical drawing—there is this much to be said for the second method: given accurate draughtsmanship upon a reasonably large-scale map, the standard of accuracy should be at least as high as that attained by the hyperbolic method, and this without the employment of corrective tables.

At the same time, both methods are open to one objection, and this drawback is so serious as to foredoom both to extinction. In a word, neither method is of

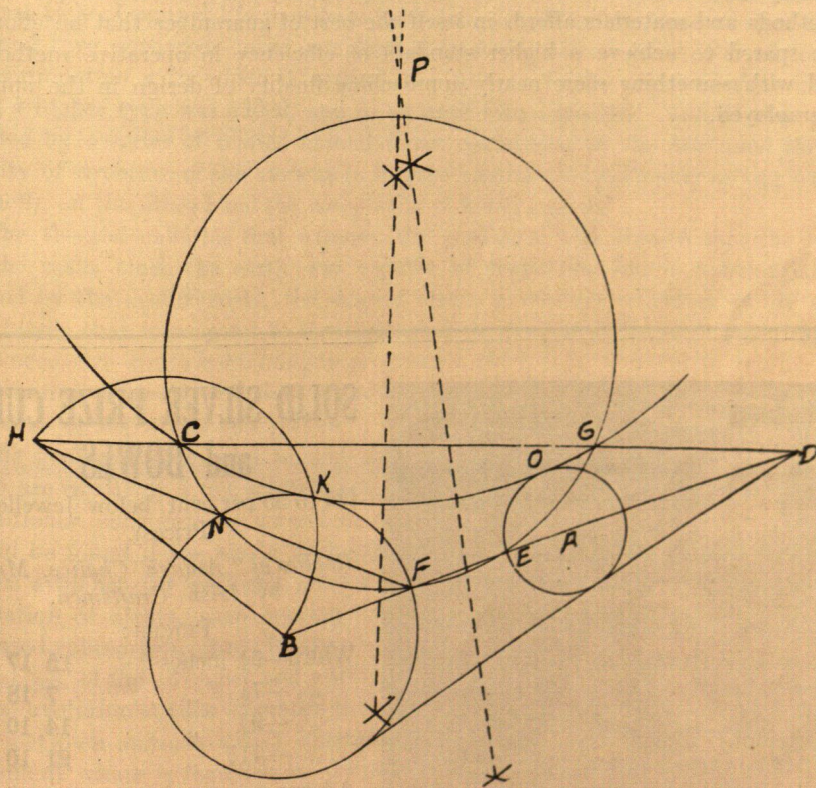


PLATE 9.

the slightest practical value in a war of movement.

To attempt to forecast the future trend of any branch of scientific development is invariably a risky proceeding. Nevertheless, no one will jeopardise his reputation by subscribing to the opinion that in the development of sound-ranging much has yet to be achieved. The precise trend of further progress is rather difficult to determine. It would, for instance, do much to increase the mobility

of installations if, in the near future, it were found possible to get the thermionic valve to shoulder the burden previously borne by the network of land-lines between sound-posts and Bull apparatus.

More promising still, however, are the prospects of converting the stations into D.F. posts by coupling matched and non-resonant Tucker microphones in pairs, each instrument being located at either end of a rigid beam pivoted at its central point. By applying what may be roughly described as the binaural principle, both microphones could be synchronised with respect to the sound-wave of the hostile gun by merely swinging the beam to a position at right angles to the incident sound-wave, a bearing then being taken upon the latter. In theory two such posts would suffice, while the difficulty of mobility would have been in a large measure solved. Beyond this, one can scarcely visualise what coming developments may hold in store for us. The relatively unsatisfactory nature of present-day methods and materials affords in itself the best of guarantees that no efforts will be spared to achieve a higher standard of efficiency in operative methods coupled with something more nearly approaching finality of design in the apparatus employed.



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HUMAN ORIGINS.

Résumé of a lecture illustrated by lantern slides, delivered in Officers' Mess, McKee Barracks, by Major T. J. McKinney, A.M.S.

THE question of human origins is naturally one of powerful human appeal, and fiction and pseudo-science have of recent years reaped a rich harvest by catering for prevailing curiosity and credulity on this subject. The theory of human evolution has gained special prominence of late because of its accidental association with other matters in a neighbouring country. The question in itself is a fascinating one. How does its answer stand to-day?

The position of the evolutionist may be briefly stated as follows:—Life made its first appearance on earth in a very simple form—similar to that in which the lowest type of animal life manifests itself to-day. After the lapse of ages a fresh animal type appeared—more complicated than the former—(but derived from it) in conjunction with which it carried on. After a further lapse of time another and a higher type was added, and so on until man appeared. Life is thus represented by a series of related animal forms comprising on the one hand the simplicity of structure of the amoeba (a minute animalcule resembling an egg without a shell), on the other hand the complexity of homo sapiens.

The theorist calls his first witness, the geologist, who deposes that the record of the rocks since the earth was capable of supporting life is substantially as stated by the evolutionists, the deepest strata to contain evidences of life showing fossils that correspond to the simplest form of animal life, that superimposed are successive strata containing in progression shell, fish, amphibian, reptile, bird, and mammal fossils, and that in the most recent we find, in addition, man with evidence of his works and pomps.

The geologist is careful to add that his investigations have been limited to what are relatively a few scratches on the surface of the earth, but he believes the evolutionist substantially correct in assuming that the same sequence of fossils would be found if the strata were examined at any point on the earth's surface. In his evidence the geologist gives a most fascinating description of the gradual formation of strata, each burying what was formerly the surface layer—of the repeated submergence and elevation of the land, of the ramblings of rivers through their beds, of the advances and retreats of polar ice through countless ages, etc.

The evolutionist then advances the argument of the similarity of body-structure even between animals widely separated in the scale of being, and points to development which is regarded as a recapitulation for the individual of the changes undergone by the race; thus one can actually see the tadpole passing through a fish-stage (gill-breathing), before it becomes an amphibian (lung-breathing), etc.

Having heard the general statement of the case, one feels that the theory is strongly supported by presumptive evidence. The next step is to establish it by direct proof. If there has been a gradual transformation of life through the aeons from simple to complex forms, it should be possible to produce a chain of fossils showing all the intermediate stages in the case of any existing animal. We select the horse, and are introduced to a number of extinct weird and weirdly-named fossils which seem to link the modern horse with a diminutive

many-toed progenitor at the dawn of the mammalian period. This can be done for some other animals, and one feels prepared to admit its possibility for all the lower animals. But what of man?

When man first appears he comes equipped with the physique and mental endowments with which we usually associate him. No older and intermediate forms have been found to link him with the lower animal world. It is a misnomer to refer to sub-men as if some fossil remains represent animals that were physically only half-human. Certain remains unearthed some years ago in Java by an Officer of the Dutch Army Medical Service, were at first regarded as being directly in the path of human evolution; even the most enthusiastic palaeontologist is not now prepared to admit this. They represent an extinct animal of the anthropoid type which is no more in the line of succession of humanity than the gorilla, chimpanzee, or oran-utan. Reconstruction of the most ancient human fossils show the upright posture, a brain capacity equivalent to that of modern man, and the capability of speech. Geology so far suggests direct divine intervention in the creation of man. Athene sprang into being, vocal and fully armed, from the head of Zeus.

The Heidelberg man and the Piltdown man—to refer to the oldest human remains—represent the two great sub-divisions of humanity as we know it to-day, the Australian aborigine and the rest of humanity respectively. These two types seem to have existed side by side in the Old World, particularly in Europe, and their relations were apparently far from cordial. The more bestial type was gradually exterminated, but some stragglers made their way to Australia. They brought with them their dogs—which are now the dingo, a mammal representing a higher stage of development than the indigenous Australian mammals. His old enemy has followed the Australian black-fellow, and the war of extermination is not over. No fossil remains of the Adamite race from which these two representatives of humanity sprang have yet been discovered.

The evolutionist is not concerned with proving that man comes from monkeys; in fact his aim is to show that they and man are the leaves on entirely separate branches of the tree of life. Some pieces of branches have been found that connect the ape with the trunk; none have been found to connect man with that trunk. The missing link so frequently and glibly quoted as if there were only a small lacuna between man and the rest of the animal world could be more accurately described as the non-existent chain.

The literature on the subject forms fascinating reading even for the uninitiated, thought at first there is bewilderment in the maze of cultural epochs with their finds, and in the many details associated with the various fossil remains. Still if one bears in mind that we are dealing with two types of ordinary humanity, and that sub-men have not as yet been discovered, nor fossils of extinct species of humanity that thread will guide one through the labyrinth.

Granted that the row of fossils necessary to establish the accuracy of the theory of evolution were forthcoming—the evolution of the body does not affect the creation of the soul. As one extreme "Darwinist" has stated the emotional and ethical potentialities of humanity postulate a psychic influx, and cannot be explained as mere manifestations of living protoplasm. Whether one believes in the direct or indirect creation of man he must in either case be derived from the slime of the earth, and conclusive proof of the theory of evolution would absolve him from none of his obligations. The Ten Commandments and the Defence Forces Act would still hold good.

HORSEMANSHIP.

NOTES ON SEAT AND HANDS.

By CAPTAIN G. O'DWYER.

Now that the hunting season is in full swing the elaboration of a few general principles, based on a moderate experience of various types of jumping may not be amiss.

It is proposed to confine the present article to observations on seat and hands in as far as these can be dealt with apart from the general question of horsemanship. Many would expect to find separate observations on seat under the headings—military seat and hunting seat. Such a sub-division is not feasible as there is only one correct seat which serves alike for hunting, military requirements and general purposes.



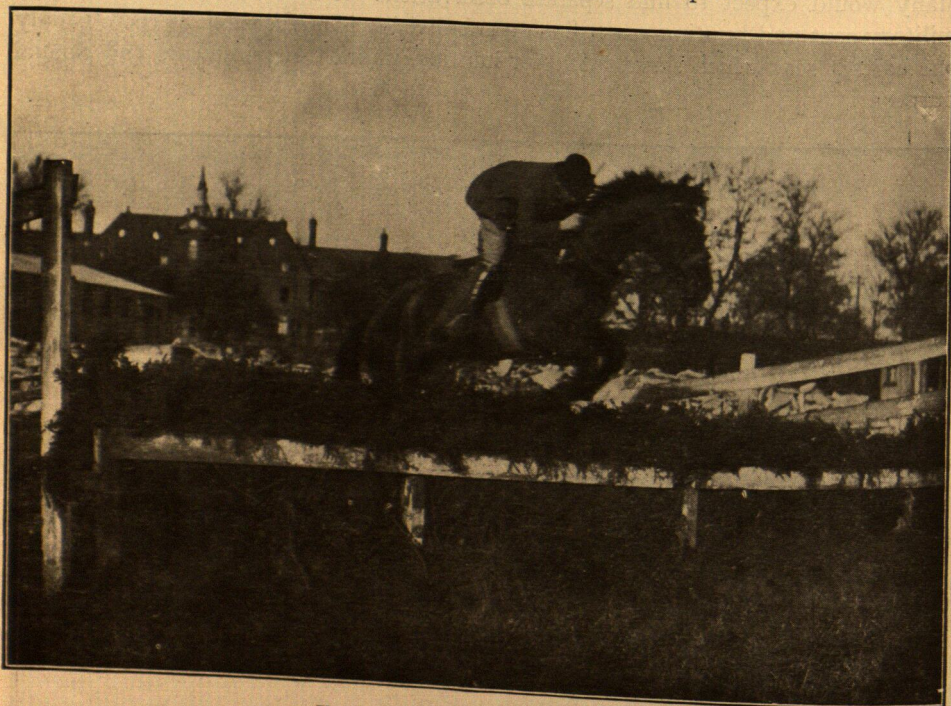
A good seat.

["An t-Oglach" Photo.]

The rider should sit in the centre of the saddle holding his body perfectly upright with his loins thrust forward. He should sit in the centre of the saddle, because this position brings his weight practically over the centre of gravity of the horse, and he should sit perfectly upright, because his loins must be free at all times to control other parts of the body should occasion arise. The length of the stirrup-leathers varies with the conformation of the rider's legs and, to some extent, with the conformation of the horse. A tall, thin man will ride relatively longer than

his short, thick, muscular friend, while it is found that a stout horse rides more comfortably with shorter irons. Whether one rides long or short depends also on the kind of riding proposed; in racing,—short by all means, but when riding a charger for hunting and general purposes, long stirrups are more serviceable and certainly more graceful.

Now, one may ask what is to be the length of his stirrups? A definite answer, based on measurements or mathematical calculations is not forthcoming, but the following appears to provide something in the nature of a good general rule. Adjust the irons so that when the feet are fully home and the knees slightly bent the rider can raise himself clear of the pommel of his saddle. The toes of one's boots should not point downwards or outwards. It will be found a good practice in the interests of knee-grip to place the weight on the inside of the stirrup irons.



Exaggerated forward position.

[“An t-Oglach” Photo.]

For parade purposes, the rider is advised to stretch his legs to the full extent, incline the toes slightly upwards, and grip with his knees. The irons are then adjusted until the bars are in line with the soles of his boots; the ball of the foot is placed in the stirrup, and the heels pressed downwards. The position so secured is correct for military purposes.

Hands are more often talked of than understood, and many experts are of opinion that good hands are rather a gift of Providence than an acquirement; but even indifferent hands are capable of improvement. The sympathy which exists between a rider and his horse is mainly exchanged through the medium of the reins. Good hands are those which are sensitive to touch, and quick to obey

It may be well to explain where and how this punishment is inflicted. If a horse is properly broken it carries the bit on the bars of its mouth and on its tongue, both of which are naturally tender. If the rider keeps this fact constantly in mind he will develop in himself better hands, and in his horse better manners. His security in the saddle influences very considerably the punishment inflicted, because, if he does not possess that combination of knee-grip and balance, both of which are absolutely essential, he must very often use the rein for a purpose other than that which it was meant to serve. It has been said, and very truly, that hard hands make hard pullers, *i.e.*, the rider who cannot retain his correct position in the saddle without misapplying the rein for that purpose, will undoubtedly harden his horse's mouth. If he rides lightly on his rein, he ensures that his mount never becomes



Calling a taxi.

[“An t-Oglach” Photo.]

conscious of his weakness, whilst the horse which has been heavily handled for a time begins to ignore the bridle, and eventually the rider who should control, is forced to submit to the horse's will. The rein should be held with both hands, backs outward, four inches from the body and four inches apart. This position varies at every stride so that the rider would be well advised to see that he has got the foregoing measurements approximately, before he moves off. When taking the rein he should draw it through the fingers to the required length, then close both thumbs firmly, and the position should remain unchanged for the longest hunt. The hands should be partially closed and the wrists bent inwards so that, should he jerk the rein inadvertently, it does not hurt quite so much, the fingers and wrists acting as shock absorbers against the bars of the horse's mouth.

To put the foregoing into practice one must acquire two things—balance and grip. Most Army people believe that they ride by balance, while riders outside the Army favour grip. There appears to be no sound reason for separating these faculties, while numerous arguments are to be found in support of their combination. When developed and used in conjunction they produce security and a confidence which a horse will not be slow to appreciate. One who concentrates entirely on the former will find some day that his seat is not as yet quite right. When he is offering assistance by leaning forward to enable his horse to span the obstacle and the horse refuses, the equilibrium which had so far served to keep him in the saddle is destroyed and the dictates of the rider's brain with the object of avoiding unnecessary punishment.



A good position.

[“ An t-Oglach ” Photo.]

he is just shot into space. Such a flight often ends in an open ditch from which he emerges to find even his best friends enjoying his discomfiture. Had he gripped the saddle tightly with his knees, in addition to retaining his balance he would have avoided the fall and probably the refusal, as a horse will scarcely ever fail to obey a command with hounds if the rider sits firmly and adopts the attitude described above.

To emphasise these suggestions it may be well to consider the making of a jumper. Nothing taxes the ability of a horseman more, perhaps, than the handling of a youngster over fences, and nowhere are errors so drastically punished, as more injury can be done to a horse's manners in a day than can be repaired in a season. Presume that the youngster has already been schooled with a cavesson and long

rein, and has now to be ridden. As the manner in which a horse is ridden over fences in the initial stages of its career is of paramount importance, it would be well to secure the services of an experienced rider for this purpose. One then selects a small, safe fence, not a stone wall; the risk involved in the latter is too great, particularly if the stones are rough and heavy. A low, wide, firm bank at a part where the ditch, particularly on the near side, is clearly marked, serves the purpose best. If the bank is high and upright the horse may refuse, and must then be punished, as a refusal cannot be tolerated. If the ditch at the near side is blind or partially covered in with long grass, it is possible that the youngster may stand too near. Having found the sort of fence required, the rider gets up. Watch how carefully he adjusts his stirrups and rein; presently he is facing the fence at right angles in a slow collected canter. He sits absolutely unperturbed, upright and graceful. When he arrives within a few strides of the fence he lowers his hands and incidentally decreases his pressure on the rein, while still feeling the horse's mouth. As he lowers his hands he grips more tightly with his knees, with the object of allowing the horse to look and to give it confidence. He has gripped with his knees and thighs, but the lower parts of the legs are free. Just as the youngster arrives at the place where it should take-off, the rider hits in with his heels. Immediately the horse leaps, (the rider leans forward and lowers his hands still more so that his mount has a free head to see where it is going). They are on the bank and the rider is sitting upright and ready for any emergency. He has again made contact with the horse's mouth lest it should lose its feet or be inclined to rush; moreover, he is not quite finished as the youngster may fight shy of jumping off at the other side. His attentions are concentrated on getting the horse to look and place its hind legs properly under it; having succeeded in this he again hits it with his heels as an indication to the horse that it is to leap. At the same time he leans slightly forward, which action again insures that the youngster has perfect liberty to see where it is to place its feet on arrival. The rider is now very cautious about getting to his original position lest he should jerk the rein, as punishment in this way must be avoided. He, therefore, takes the required strain gradually. The most important part of the work is satisfactorily over and he pats his mount on the neck in appreciation. When negotiating a water, or fly fence, there is a slight difference, inasmuch as the rider must not interfere with the horse's head from the moment it takes-off until he needs to control its speed in the next field.

A great many hunting people believe that a tight hold on the horse's head helps to keep it on its feet, should it peck at the far side, but that is not so. On the contrary, a horse never needs a free head more than it does at this moment, as its hind legs are still in the air and, should the rider lean back, he increases the impact on the horse's fore-feet by bringing his stirrup-leathers into line with its legs and straightening his knees. On the other hand, if he retains the forward position the horse can, and will use its sight and brains to right itself, and portion of the impact is taken up by the rider's knees which are bent. In addition, his weight is kept over the horse's centre of gravity all the time.

Riders who, by force of habit, "call a Taxi" with one hand while negotiating an obstacle, will find it a good practice to wear both hands on the rein in the way

above described, and try jumping off a bank slowly. Before the leap, the hands should be placed on either side of the horse's withers and sufficient bodily weight transferred to them to keep them there during the experiment. Urged by the rider's heels, one finds that after all, the horse is capable of jumping with a free head. After a little practice in this way the rider finds that he automatically holds his body slightly forward without putting any weight on his hands. How far forward he leans depends on the distance which he asks his mount to span. For instance, if he is negotiating an extremely wide ditch he should lean well forward as the horse's greatest difficulty will be to get its hind feet on terra firma. On the other hand, if the span is short and there is no obvious reason why his horse should not get there without much effort, there is no advantage in leaning as far forward as he did in the previous case. The forward position of the upper portion of the body has thus three advantages: first, it transfers the weight from the horse's hind legs thus enabling it to propel itself; secondly, it ensures that the knees are bent which decreases the impact on the horse's fore-feet; thirdly, it helps the rider to give his horse a free head.

These remarks apply mainly to hunting which must not be confused with either racing or Show-jumping. A steeplechase jockey will sometimes straighten his knees and actually swing on his rein while negotiating some of the more formidable obstacles in a race-course. This simply means that he does not intend to offer any assistance to his mount. While it is true that the chaser is trained to take a hold, it is also true that the jockey is taught to wear his hands low.

Riders, when jumping either the gate or wall at Ballsbridge, sometimes lean still more forward as the horse's fore-feet are about to touch the ground. Their only consideration is to transfer the weight as far as possible from the horse's hind legs which are still in danger of losing them the competition. Show-jumping besides differs from hunting inasmuch as in the case of the former, one always knows what is to be found at the other side.

TO CONTRIBUTORS.

Articles for publication in AN T-ÓGLACH should be addressed direct to The Editor, AN T-ÓGLACH, Department of Defence, Parkgate, Dublin.

SPORTING NOTES.

By COMMANDANT McALISTER.

IN this issue we show a comprehensive table recording performances in all branches of Army Athletics. The times, heights, and distances shown have been checked by the Army Athletic Association, and are correct. They will, therefore, serve as a useful index for future reference, and also show where there is need for improvement.

The times in the middle distances in particular are rather poor. Quite candidly, too, the jumping is of a low standard. It is felt that in the High Jump the 6 ft. mark should be at least reached, and there does not seem to be any reason why, with the material at our disposal, a man could not be found to exceed the 21 ft. mark in the Long Jump.

The records for the field events, as a whole, are disappointing, and it is thought that, having regard to national traditions, in this department at least there should be some outstanding performances. No year should be allowed to pass without an improvement in every mark, and it should be the aim and endeavour of every Commanding Officer to find material whereby this might be accomplished.

Both the football and the hurling were, throughout the year, of the very highest standard. Indeed, the hurling game with the Garda Siochana earlier in the year has been described as one of the best exhibitions of the game that has ever been witnessed in Croke Park. In addition to improving the game within the Army, I think we can be pardoned for claiming that in no small measure we have assisted in its development throughout the counties.

Considering the wide range of competition in Boxing, and the number of entries submitted each year by the Army, it is disappointing that a better result was not forthcoming at the last Irish Championships. This is partly accounted for by the fact that competition is a good deal more keen, and we have less facilities than was formerly the case. We look forward confidently to the coming Championships in April.

Regarding Handball, there is little to be said beyond that it might be accorded a better measure of support. The Army Athletic Association believe, and we are inclined to agree, that this pastime is not supported as it ought to be. This fact is surprising, since a game that was formerly entirely Irish has now developed an unmistakably international reputation, and has become increasingly popular.

The Cross-country Championships which were only held recently, showed a refreshing enthusiasm by the competitors and amongst the personnel of the Units concerned. The result, a tie for first place between the 1st and 4th Brigades, was extraordinary, and, needless to say, quite unexpected. To divide the honour between both Units was, to my mind, the only possible solution since, if the seventh man home counted, the result could easily be that neither the 1st nor the 4th Brigades might win. The contingency was apparently not provided for, though, if I recollect aright, there was a precedent in the Irish Senior Cross-country Championships. I understand that the leading six for the 4th Brigade came from Commandant Haughey's battalion, and no one will begrudge the latter the satisfaction of keeping the Duggan Shield for the first six months of the year. Lieutenant

Coughlan won the individual honour in the useful time of 35 minutes 18 3/5 secs. The conditions, especially in the back stretch, were appalling, and the finish with that improving runner, Private Morris, from the Curragh, was worth going a long way to see. It will occasion surprise if some of the Army teams do not figure prominently in the coming Junior Championships.

In conclusion, it might be said that the progress that the Army has made in athletics as a whole is not at all good. Many excuses are being put forward, but it is thought that the weak link in the chain is apathy on the part of Commanding Officers, and particularly Battalion Commanding Officers. From the point of view of the Army Athletic Association, this is the position upon which progress or retrogression depends. I am aware that in making this statement I am courting severe criticism. The fact remains that the carelessness of the Commanding Officer is always reflected in the progress of his Unit. The force of example in connection with athletics is more obvious in athletics than in any other phase of Army activity. Where in reality we have an opportunity of producing the best in every branch of sport, we are compelled to admit that our performances are very mediocre. There is no doubt that the stuff is there. To find and develop it is unquestionably the duty of the Battalion Commanding Officer in particular.

GERMAN ATHLETIC CHAMPIONSHIPS.

In an examination of the results of the German Athletic Championships, one point of some interest emerges. Where in this country we decide weight-putting, javelin throwing, and similar competitions by the best distance with either hand, the Germans, with characteristic thoroughness, decide the best total distance with both hands. The idea, presumably, is the more even development of the body on both sides. Where we are inclined to regard athletics simply as a pastime, the Germans endeavour by its means to improve the physique of the nation as a whole. With them the competition is not nearly so important as the object in view. With us the direct opposite is the case, and the matter is worthy of consideration by the nation as a whole, and by the Army in particular.

TO SUBSCRIBERS.

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Immediate notice should be given of any delay in receipt of the Journal.

ARMY ATHLETIC RECORDS, 1927.

EVENT	WINNER	2ND PLACE	TIMES (Track Events)	DISTANCES AND HEIGHTS	WINNING COMMAND
100 yards	Sergt. S. Hennessy	Sergt. T. McMahon	10 $\frac{3}{4}$ secs.		Eastern
220 yards	Lieut. Hogan	Sergt. S. Hennessy	25 $\frac{1}{4}$ "		Southern
440 yards	Lieut. G. N. Coughlan	Capt. McKenna	55 "		Western
880 yards	Lieut. G. N. Coughlan	Capt. McKenna	2 min. 3 $\frac{1}{4}$ "		Western
1 Mile Flat	Lieut. G. N. Coughlan	Pte. J. Cullen	4 " 42 "		Western
3 Mile Flat	Pte. J. Cullen	Pte. A. Morris	15 " 56 $\frac{3}{4}$ "		G.H.Q.
120 Yards Hurdles	Cpl. Manning	Lieut. Hogan	18 $\frac{3}{4}$ "		Eastern
Relay Race	Western Command	Southern Command	3 " 55 $\frac{3}{8}$ "	5 ft. 7 in.	Western
High Jump	Lieut. Cotter	Sgt. Houlihan		19 ft. 11 ins.	Southern
Long Jump	Lieut. Hogan	Pte. Brophy		42 ft. 8 $\frac{1}{2}$ ins.	Southern
Hop, Step and Jump	Lieut. McMahon	Sergt. Bond		9 ft. 1 in.	Southern
Pole Jump	Pte. Eustace	Pte. Joyce			Southern
Half Mile Cycle	Cpl. Hilliard	Pte. Flood	70 $\frac{3}{4}$ secs.		Southern
One Mile Cycle	Cpl. Hilliard	Pte. Thomas	2 min. 27 "		Southern
16 lb. Shot	Capt. O'Riordan	Pte. Birmingham		33 ft. 9 $\frac{1}{2}$ ins.	Curragh
56 lb. (Slinging)	Capt. O'Riordan	Capt. Lohan		25 ft. 1 $\frac{1}{2}$ ins.	Curragh
56 lb. (over bar)	Cpl. Gallagher	Cpl. Murray		11 ft. 6 ins.	Eastern
Discus	Capt. Booth	Lieut. Hogan		109 ft.	Curragh
Javelin	Cpl. Hilliard	Capt. O'Riordan		133 ft. 2 ins.	Southern
Tug-of-War	G.H.Q.	Eastern			G.H.Q.
Best All-round Athlete	LIEUT. HOGAN.				
Best Command	Southern				Southern

EVENT	WINNER	2ND PLACE	TIME	DISTANCES AND HEIGHTS	WINNING COMMAND
SWIMMING: 100 yards 220 yards 440 yards	Pte. C. P. Millar, A.T.C. C/Sgt. Kennedy No competition	Pte. Gibson A/Cpl. Brennan	79 $\frac{1}{2}$ secs. 3 mins. 43 "		G.H.Q. G.H.Q.
HURLING: Championship Chaplains' Cup	Southern Command 6th Batt., 6th Bde.	G.H.Q. Command 1st Batt., 8th Bde.	3-5 to 1-2 5-2 to 1-0		Southern 6th Batt.
FOOTBALL: Championship Medical Services' Cup	Southern Command 9th Batt., 6th Bde.	Eastern Command 2nd Batt., 8th Bde.	4-3 to 3-4 2-4 to 0-2		Southern 9th Batt.
HANDBALL: Hard Doubles Soft Doubles Hard Singles Soft Singles	Cpl. Delaney and Pte. Savage Cpl. Maguire and Pte. Scanlon Cpl. Delaney Pte. O'Mara	Cpl. Doyle and Pte. Gough Cpl. Delaney and Pte. Savage Cpl. Doyle Pte. Scanlon			Eastern G.H.Q. Eastern Southern
BOXING: Fly Weight Bantam Weight Feather Weight Light Weight Welter Weight Middle Weight Cruiser Weight Heavy Weight	Pte. J. Joynt Cpl. McDonagh, M. Pte. Leslie, C. Pte. Devine, C. Pte. Holian, T. Pte. Morgan, T. Pte. Morgan, T. Pte. Kidley, J.	Pte. J. Barrett Pte. W. Metcalfe Pte. T. O'Donnell Pte. C. O'Mahoney Pte. J. Howard Pte. W. Callaghan Pte. W. Callaghan Pte. B. Connery			No. 4 Brigade No. 4 Brigade No. 8 Brigade No. 2 Brigade No. 3 Brigade No. 5 Brigade No. 5 Brigade No. 1 Brigade

Cross-Country: Draw between No. 1 Brigade, Curragh, and No. 4 Brigade, Limerick. 64 points. Time, 35 minutes, 18 3/5 secs.
Lieut. Coughlan was first man home.

REVIEWS.

THE HIDDEN IRELAND. By Daniel Corkery.

This work deals with Ireland in the XVIIIth century. The author emphasises the fact that the impressions of the historian and writer who approach the period from the English standpoint are superficial and false. They have failed to penetrate the mentality of the people and to understand their philosophy of life. This would have been possible only by a sympathetic appreciation of their language and of the culture which that language concealed. The author applies the "Open Sesame" of a sympathetic approach to the soul of the period through its literary remains, and the result is an illuminating exposition of the social, economic, and cultural condition of the time. We see the rapid passing of the "big house," the slow decay of the tradition of the Bardic Schools, the consequent innovations in Irish verse-forms, and we get occasional glimpses of intercourse between remote places in Ireland and the continent of Europe—thanks to the Wild Geese. The book, rich in Irish quotations illustrative of the viewpoint of the author, is an essential for a proper appreciation of Irish literature of the period with which it deals. The method of the author is one that will vastly enrich our knowledge of the past when applied to other periods.

THE JOURNAL OF THE ROYAL SOCIETY OF ANTIQUARIES OF IRELAND. Hodges Figgis & Co., Ltd., Dublin. 10/6. Vol. LVII., Part 5.

This issue is of particular interest to Irish soldiers, as it contains "Notes on the Formation of the First Two Irish Regiments in the Service of Spain in the Eighteenth Century," by the Marquis MacSwiney of Mashanaglass. The author is well known to Officers of the Irish Army as a writer and lecturer on kindred matters of Irish Military history. The present communication summarizes, by way of introduction, the activity of the Irish troops in the service of France, from the Boyne to the Peace of Ryswick, when a reduction in strength took place. The accession of Philip V. and the consequent War of the Spanish Succession gave many of the disbanded Irishmen an opportunity of military employment against England, now an enemy of France and Spain, nor was their Jacobite enthusiasm lessened when on the death of James II., Louis XIV. publicly acknowledged his son as King of England.

The main objective in the remainder of the article is to sift conflicting documentary evidence and to fix the dates on which Crofton's and Mahony's Regiments of Dragoons were raised. In carrying this to a successful issue the author refers to many engagements on the lengthy battle-roll of these distinguished Corps.

The bibliography suggested by the extensive footnotes is extremely useful for the worker in this branch of historical research.

The concluding article on "The Early Crosses of East and West Meath," by H. S. Crawford is well illustrated, and as in the case of "Tor-inis," by Henry Morris, and "Teamhair Luachra," by J. J. Doyle, will repay close study by Officers who may be anxious to pursue similar investigation in their own neighbourhood.

With reference to one of the articles it should be pointed out that the appellation "Wellington Barracks" is an anachronism in January, 1927.

CURSAI TÓMAIS. M. DO SCRIB, BAILE-ÁTA-CLIAIT. NOUGES AGUS FISSIS, SRÁID
TOBAIR PÁDRAIS, 1927. 7s. 6d.

'Sé an t-úrscéal an cúro de'n litríocht is mó le ráó i nGac teangain beó—áct
ní'l áct corr-sómpla agaimn i nGaeóilg an lae muidiu. Eacra buacalla aimsire
i rit an cógaró ar otaect ar ais i gConnrae an Cláir óó ó Sasana Nuao is bunus
leis an úrscéal so. Cioó gur scéal duó brónac atá ann tá cuma naóúirta air.
agus o'eirig so breáig leis an iarraect litearóda so.

Cuirp-eólas. Bean-riagalta Cloear lugaró i Mumeacán do scriob. (M. H.
Mac Suill agus a Mac, Teó, Át-Cliait. Is. 6d.)

Doeir an t-ugóar 'sa réamráó :—

'Deirtear nac mbíonn don olige ar an riactanas. Is amlaio a bi an sgéal agaimne,
i otaca le cuirpeólas de, nuair a tugao réim do teangaró na nGaeódeal i meadon
sgoileannaib na h-Eireann. Nio nac iongnao, ba cúis átais uúinn é, ceao agus
ugóartas a beit agaimn le naóbaraió léiginn ár scoile do múmeao trío an
Gaeóilg ac ó tárla nac raio téicseabbar ar bit ag baint le cuirpeólas 'sa teangaró
sin bíomar i gcrúao-cás. Ba mian linn an obair a óeanaí trío an Gaeóilg agus
o'á bris sin ní raio de malairt agaimn ac aistriú a óeanaí o'n mbéarla. Nioio
furust an obair i sin toisc an méio téarmaí neam-coitceannta a baineas le cuir-
peólas ac tugamar iarraect air agus is de táirbe na hiarraecta sin atá an leabairín
seo le fagail anois.'

Coiscéim ar agaró ar maite leis an nGaeóilg an iarraect so. Obair ana-óeacair
ana-éruao do b'eoó é a leicéro so de leabar do tiomsú. Tá deic bpiectúirí
an-oireamáca mar foillsugao ar an téics. Bí Seirbís Doctúireacta an Airm
ar na daoib do cúroig le téarmaí teicniúla do solácar.

T. MAC C.

"SO THIS IS DUBLIN." By M. J. MacManus. (Talbot Press, Dublin. 2/6 nett).

This book, in the midst of satire, raillery and exaggeration, delivers many a
healthy home-thrust, and is a particularly useful tonic at the present juncture
when there is a tendency to morose cynicism. Occasionally the author mistakes
his quarry and at other times he misfires—but most of his shots tell, and he is
impartial in his aim. He hits the native Irish but he does not spare the would-be
stranger in our midst, not even the versifier who in his superiority complex rants
of his superior alien blood, and is not above stealing the Celtic thunder. It is a
good thing for a nation as for the individual to hear an occasional home-truth in a
fairly pleasant way.

The book ends with a piece entitled "Ballinallee"—reminiscent of the dying
down of tumult and the departure of captains and of kings. Though dwelling
on the reaction after the exaltation of romance and lofty endeavour it does not
attempt to destroy or degrade the spirit of idealism.

For all its wit the work is not devoid of humour and the human touch that
accompanies the latter.

A few of the illustrations fall flat as caricatures—one indeed to the point of
being offensive—and do not enhance the value of the work.