

Ἀν τὸζλάς.



THE IRISH
ARMY QUARTERLY

DUBLIN:

PRINTED AT MAHON'S PRINTING WORKS, YARNHALL STREET.

ALL RIGHTS RESERVED.

Ἰα βαρσεδφαραζαῖτον

Major N. MacNeill
23/28

AN t-ÓSLÁC.

THE IRISH ARMY QUARTERLY.

VOL. I. No. 1.

OCTOBER, 1927.

PRICE 4/-

TABLE OF CONTENTS.

	PAGE
MESSAGE FROM THE MINISTER FOR DEFENCE	1
EDITORIAL	2
THE BOTHAR BUADHA PARADE, 1927	8
KEVIN O'HIGGINS: AN APPRECIATION. <i>By Professor S. Hogan, M.A.</i> ...	12
SARSFIELD'S RIDE: A MODEL CAVALRY RAID. <i>By Col. J. J. O'Connell, A.S.I.</i> ...	23
THE PROBLEM OF HAULAGE FOR FIELD ARTILLERY. <i>By Major P. A. Mulcahy, O.C. Corps of Artillery</i>	36
TEACHT AN AMADAIN. <i>An Maor B. O Briain, do Scriobh</i>	41
MODERN PROBLEMS OF GUERILLA WARFARE. <i>Reprinted by kind permission of "The Army Quarterly"</i>	44
AN INCIDENT OF THE ANGLO-IRISH WAR. <i>By Capt. E. O Baoighill</i>	51
COCK-FIGHTING. <i>By "Eskorodismenos"</i>	53
THE SHANNON SCHEME. <i>By Commandant J. J. Comerford, B.Sc., M.Sc., A.M.I.C.E.I.</i>	55
A BRIEF HISTORICAL ACCOUNT OF THE DEVELOPMENT OF WIRELESS. <i>By Major Archer, O/C. Army Signal Corps</i>	67
THE MILITARY ANTIQUITIES OF IRELAND. <i>By Professor R. A. S. MacAllister, LL.D., F.S.A.</i>	76
THE HOLLAND SUBMARINE. <i>By Major D. J. Doyle, A.M.S.</i>	80
THE FIRING OF BLANK AMMUNITION FROM THE LEWIS GUN. <i>By Comdt. D. J. Stapleton</i>	84
THE CASE FOR ARMY PENSIONS. <i>By Col. T. F. Higgins, Director of Medical Services</i>	93
SLÁINTEACÁS SAN ARM. <i>An Maor Mac Cionaotha, do scriobh</i>	95
THE ARMY JUMPING TEAM. <i>By Major L. Hoolan, Director of Transport</i> ...	97
NOTES ON AERIAL PHOTOGRAPHS OF TARA. <i>By L. S. Gogan, M.A.</i>	101
CONUS DO h-AMMNIGEAD "CURRAĆ AN LAOIS" AGUS "TOBAR NA LEAMNACHTA." <i>An Captaen R. Ó Fóglaoda, do soláscrúig</i>	105
WHY WE NEED A DEFENCE FORCE. <i>By Comdt. D. Bryan</i>	108
A PLEA FOR A HOBBY. <i>By Major J. P. M. Cotter</i>	115
SPORTING NOTES. <i>By Comdt. C. McAlister</i>	117
WINTER READING	120
THE WRITINGS OF PATRICK PEARSE	122
REVIEWS	123

ALL RIGHTS RESERVED.

The views expressed in this Journal are the personal views of individual contributors, and cannot be regarded as official.

Subscription price 13/4 per annum, post free. Cheques, Postal Orders and Money Orders to be made payable to "The Manager, An tOglach, Department of Defence, Parkgate, Dublin."

THE MINISTER FOR DEFENCE.



[“An t-Oglach” Photo.]

THE MINISTER'S MESSAGE

ROINN COSANTA
(Department of Defence),
BAILE-ATHA-CLIAITH
(Dublin).

I have been given this opportunity of speaking to you who wear the uniform of the National Army. I use this occasion to congratulate you on the progress made since the creation of the Army so few years ago. When I consider the responsibility that is yours, I am not in the least surprised that that progress has been made.

You are the first Regular Irish Army that has existed for many generations, and therefore not merely do you inherit the tradition of all those who served our country so heroically in the past, but you have to lay the foundations of a tradition of organised, disciplined, unstinting service of Ireland in the future.

I understand your uniform to imply that you recognise no limit to the service your country has the right to expect of you. You desire to serve wisely, and you recognise that in your case wisdom is disciplined obedience.

You have learned that an effective army can only be made and maintained by care and attention to every detail, even to details that may seem small indeed.

I believe that you are determined that no matter how glorious a future God may have in store for our country, she will always find her Army worthy of her. That object can only be obtained by Generous Service, Disciplined Service, Unquestioning Obedience. I believe you possess all the qualities necessary to attain that object.

Our generation has been favoured in a way that was refused to those who went before us. It is for you more than for any other body of Irishmen to prove our worthiness. It is your responsibility and it is your privilege.

DERMOND FITZGERALD.

EDITORIAL.

Lampada tradunt.—As heir in the direct line to that little four-page hand-printed AN T-OGLACH which first appeared on the 31st August, 1918, the present Journal has a proud inheritance. In spite of many vicissitudes, our progenitor flourished to a remarkable extent and changed both in form and manner of publication from an occasional four-page sheet to a regular issue, which became a bi-weekly publication of 24 pages, and later still a weekly. The four-page pamphlet has grown and altered with changing conditions, but has ever been a reflex of the spirit and a response to the needs of those whom it served.

At its inception it was intended for circulation amongst Ireland's Volunteer Army, and confined itself almost exclusively to military matters of a nature calculated to be helpful, instructive and inspiring to its soldier readers. Disturbing political or partisan influences were rigidly excluded, and the organ attempted to preserve the Army of Ireland as a separate entity above and beyond party or faction.

After the evacuation of the country by the British Forces, AN T-OGLACH continued to be to the newly-established Army what it had been to the Volunteer Organisation. The changes wrought by five years necessitate a re-modelling of the Journal and an extension of its scope. Whilst enshrining the spirit of service which animated the Volunteers, and providing a helpful stimulus to members of the Forces to extend their professional knowledge, the Journal will afford the general public an opportunity of judging the work, progress and evolution of the Army, in a manner of speaking, from within.

References to progress and evolution suggest that further changes in the Army are anticipated. Constant change is associated with the normal growth and development of healthy organisms, and a stereotyped Army is one that has ceased to march with the times. We regard change in the Army as a sign of healthy normality, and look forward to commensurate change in the externals of this Journal.

The ancients used a torch in their relay race. Metaphorically speaking, the Irish Army has taken the torch from the dead hands of the past with an implied injunction to place it in the waiting hands of the future. Flame is symbolic of an ennobling and purifying influence—in this case it is the spirit that animated the Volunteer Organisation. AN T-OGLACH will assist in carrying on the tradition of that spirit so clearly stated and so strongly emphasised by the little four-page pamphlet—namely, that the Irish Army is the Army of the Nation, above and beyond party and section.

Our Army has not the annals of a proud military tradition emblazoned on flag and crest; still, in the popular traditions that preserve the exploits of the heroes of the dawn of our history, in the annals that narrate the actions of native princes and leaders in momentous military crises, in foreign archives that record the deeds of men who gave their lives for Ireland in the service of foreign kings, and in the recent history of our country we find countless models and guides in all that pertains to the proper conduct of Irish soldiers. Fionn, who perfected the organisation of the country on a military basis, an organisation begun when Suetonius Paulinus was butchering the Druids in Anglesea and threatening to advance the Roman Eagles across the Irish Sea, Brian, who broke the Dane at Clontarf, Owen Roe O'Neill of Benburb, Hugh O'Neill of the Yellow Ford, the Wild Geese of later years, and our recent noble dead afford an example and an inspiration. The Irish Army has taken the torch from their hands. It is the proud privilege of AN T-OGLACH to assist in maintaining and transmitting the traditions established by such.

BUDGET AND ARMY ESTIMATES.

The Minister for Finance, in his speech introducing the 1927-'28 Budget, summarised the defence policy of the Government in its bearings on finance:—"I need

hardly say that the Government regards the maintenance of an efficient defence force as one of its primary duties, and that it would give no countenance to the idea that the cost of the Army is expenditure which at any time may be arbitrarily cut down. We need a defence force to protect the State and the people from internal attack; we need a defence force to ensure as far as possible that our national rights will be respected by other States. That this is a small and comparatively poor State does not affect the position. If we can only have a small Army we can still have an Army of strength proportionate to the wealth and territory to be defended. The state of international morality is not yet such that we can rely on our own national good behaviour to safeguard us. A country that will not provide for its own defence according to its capacity is not likely to have its rights protected in a spirit of pure altruism by any other country. Heretofore our defence force has been simply a standing army. It could, indeed, have taken no other form. But it has always been recognised that once the country had definitely reached normality, a standing army of ten to twelve thousand men would no longer be the cheapest or most suitable type of defence force.

The Government is of opinion that immediately after the General Election it will be possible to take in hand the task of gradually transforming our present Army into a different type of military machine. This opinion rests on the assumption that the electorate will give increased support to parties which accept the Treaty and Constitution and are prepared to work them. If that assumption proves to be justified, it will be possible to save expense by concentrating troops into a smaller number of posts, to push on with the creation of an army reserve, and within a short time to create the nucleus of a territorial or militia force. In this way we may in a couple of years reach a position in which the number of troops with the colours will be much smaller than at present, but in which many more men than we have now could be immediately mobilised in case of need. Even allowing for any additional burden which may be put upon our Army in connection with coastal defence under Article 6 of the Treaty, it is believed that an efficient defence force, of which the standing troops would only be a part, could be maintained at a cost of not more than £1,500,000 per annum. I propose, therefore, that we should no longer regard £2,000,000 as the normal part of the present cost of the Army, but that the figure should be reduced by £500,000."

The President, in the debate on the estimates, amplified that policy:—"It is the view of the Executive Council that it is essential for the safety of the State that there should exist an organisation for its defence, capable of preventing internal disturbance or disorder, and of defending Irish territory from violation by any enemy. It will be always necessary to maintain a nucleus of sufficient strength and training to form the basis for a rapid and efficient expansion in time of need to the maximum strength of the country's man-power. In peace-time the average citizen is inclined to regard war as a very unlikely contingency, and is, accordingly, liable to overlook the necessity for defence preparations. Experience shows, however, that it is too late to sharpen one's sword when the drum beats to battle. Our aim is to maintain the necessary nucleus at the lowest possible cost consistent with efficiency, and for this purpose we aim at training all ranks of the standing forces in duties of a more advanced nature than those which are ordinarily assigned to each rank, so that if the necessity should, unfortunately, arise, there will be available sufficient officer and non-commissioned officer material within the standing Army and in the Reserve to enable whatever additional forces may be required to be called upon, to be trained and put in the field, with the minimum delay." And again:—"An important feature of the recent development of the organisation of the Army has been the creation of the Reserve. Provision was made for the cost of the reserve in the last financial year, but the difficulties associated with its formation were such that it is only recently that it was found

possible to complete and promulgate the regulations governing it. The formation of the reserve will involve a further reduction in the effective strength of the standing Army, and when the policy in regard to its creation has fully materialised, a still further decrease in normal Army expenditure will be shown."

The estimated Army expenditure for the year 1927-28 is £2,183,767 as compared with £2,483,785 for 1926-1927, and £3,053,117 for 1925-26. Of the 30 sub-heads of the Army Vote there are increases in only 5, these increases being to some extent casual. The regulations governing marriage establishment, which is now based on a fixed percentage of married soldiers per unit, are responsible for an increase in marriage allowance.

Some of these sub-heads contain items of capital expenditure, e.g., field kitchens, aeroplanes, renewal of supplies over and above normal replacement—to replace obsolete stores.

In the subsequent discussion on the economic aspect of the Army Vote, Medical Services, as usual, received special attention, homeopathic treatment in the form of generous amputation of its Officer personnel being advised by some junior economists of the opposition. Those who say that humour is dying out of Irish public life were apparently not privileged to witness some of the Deputies playing at Chanticleer on the floor of the House, preening themselves on the economies resulting from their individual criticisms on previous occasions, as if they really believed that their crowings had made the sun rise.

A pronouncement made in the course of the debate suggests that the establishment of O.T.C. at Irish Universities is approaching reality—a consummation devoutly to be wished.

ARMY REORGANISATION.

If change is indicative of life and progress, the Irish Army since its inception has shown itself possessed of great vitality. The latest re-organization has resulted in the elimination of the three Commands—Eastern, Southern, and Western, and their replacement by six Military Districts known as—Dublin North, Dublin South, Kilkenny, Cork, Limerick and Athlone Military Districts, each occupied by a Brigade. The Curragh Training Camp—now also known as a Military District—is unaffected in area and status by the change.

The old Commands, controlled by a General Officer, acted as buffers between the contained Brigades and General Headquarters. The present system introduces direct communication between Brigades and General Headquarters.

There is an economy of administrative time and personnel with resultant financial saving in the new organisation. Officers affected by the change have been transferred to other appointments. The most important of these is the newly-created Inspection Staff. The importance of this latter in maintaining military efficiency in a standing Army which is rapidly approaching the minimum strength compatible with existence, cannot be over-estimated.

MECHANIZATION.

The military world of to-day is concentrating energetically on the attempt to find a solution to the problem involved in the above term. The fringe of the question, at least, has enmeshed us—and the O/C. Artillery Corps, in this number, gives us his views on the results of the first experiment undertaken by the Irish Army towards finding a solution appropriate to our position in so far as the section of the Army for which he is responsible is concerned; in our next issue the O/C. Armoured Car Corps will deal with the general problem in its bearing on the Army as a whole.

The problem, always more or less present, presented itself in an acute form during the World War, as a result of the failure of the relative powers of offence and defence on the Western front to maintain war in the state of fluidity with which it had been previously associated. Apparently students of military history in all countries had expended their energy in the study of campaigns by

mobile armies, and had not followed in anticipation to its logical conclusion the effect which the improvement in defence (as represented by barbed wire and machine-gun nests) would have in rendering warfare static—in view of the failure to develop the possibilities of iron and petrol combined as a means of offence. The industrial use of these in combination was not such as could be transferred straightway to the military arena to break down the system of stationary defence.

It would now seem as if mechanical discovery were about to effect a greater and a more rapid revolution in warfare than the discovery of gunpowder. Consideration of economy are, furthermore, a big factor in the issue, inasmuch as the proposed mechanization means a considerable reduction of fighting personnel, with consequent saving. The whole question, however, is bristling with numerous subsidiary problems.

Mechanization is a subject in which we cannot slavishly adopt the solution that another State may find satisfactory. In view of the insularity of our position we have to consider whether we are likely to be engaged in a war of offence or defence, and in either eventuality, on what scale. Consideration must also be given to the nature of the ground on which we might choose or be compelled to fight, the peace-time mechanical training of the civilian community, our natural resources, and last, but not least, our own psychology. Napoleon has said: "In war the moral is to the physical as ten to one." We have achieved the reputation of being a nation of good soldiers possessing good horses. Can we afford to discard all the potentialities of the good man and horse combination in favour of a machine? Can we afford to forget that our forefathers ignored, until it was too late, the lesson of Norman castle and coat-of-mail because of undue attachment to a saffron-shirted ideal? Do we require tanks or anti-tank weapons, or neither?

These problems are to-day as absorbing as they are all important, and are deserving of close study by every officer in his own particular sphere. The study will, moreover, afford a splendid opportunity of reviewing the history of tactics and strategy and of analysing the underlying philosophy.

IRISH IN THE ARMY.

Apart from the activities of the Irish-speaking Battalion, and compliance with the linguistic requirements of the Defence Forces Act by Commissioned and Non-commissioned personnel, the fate of Irish in the Army is left to individual enterprise. One frequently hears Officers—keen on Irish and on the realisation of bi-lingualism in the Army—say that during the formative period of education they were compelled by National exigencies to devote their energies to sterner stuff than grammar and phonetics, and that they have now passed the mental stage at which one might reasonably hope to become a fluent Irish speaker, and that it is futile to try. Surely, they should not allow one of the fortunes of war to crystallise into a misfortune of peace. Rather should they turn peace-time to account by a determined effort to extend their knowledge of their native tongue. There is no reason why they should not become fluent speakers, and even if they do not, the influence of their example in displaying active enthusiasm will materially assist the language movement within the Army. In the nature of things, an Army is non-productive of national wealth; we, however, have an opportunity at our doors of producing a national asset equally valuable—knowledge of the tongue on which our individuality as a nation depends. Association with the revival of Irish will keep the Army in touch with the youth of the country, to the advantage of both.

Concentrating the 1st Battalion (An Cath Gaedhealach) as an isolated unit within the Gaeltacht, looks like bringing sand to the seashore. If portions of it—say a section from each Company—were exchanged with sections from other units, the Irish-speaking section would act as a leaven in the mass of the Bat-

talion to which attached, provided that the Officers of the latter made up their minds to use it as a Gaelicising focus. Moreover, the detached sections (a system of rotation being envisaged) on their return from the Gaeltacht would consolidate and extend the work. It is certainly not unreasonable to expect that the influence of the 1st Battalion would be more widely felt in the year 1927.

SAVE THE CHILDREN.

There is a growing feeling that very earnest and definite steps must immediately be taken to secure and retain the affection of the rising generation for the genuine interest of their country. A scheme on the lines of the Boy Scout Movement in other countries must be officially initiated or sponsored to counteract the baneful influence of organizations that snap up our boyhood in very tender years to train them in the now outworn tradition of being "agin the Gover'ment." One of the gravest charges that could be levelled against a citizen of ancient Greece was that of corrupting the youth—not in a moral sense, but by the instillation of anarchic ideas or of views subversive of the established regime, and zeal for the public welfare resulted in conviction even on slender evidence. One would expect that Socrates on a doubtful charge of this nature would escape, and yet he drank the official cup of hemlock. The ancient Greeks were taking no chances.

In Ireland a movement is afoot to play upon the enthusiasm and romanticism of youth, upon its love of excitement and adventure, and inveigle the boyhood of the country into an organization ostensibly aiming at securing liberty (already secured)—but which is in reality calculated to destroy liberty and all possibility of further realization of national ideals, to corrupt the youth, and ultimately plunge the country into the great Serbonian bog of anarchy and degeneracy.

Our censure is not directed solely against the faction which openly attempts to train young Irish boys in disloyalty. There is a small section of the former political minority party who, while prating the usual cant of passive loyalty to the State, keep the eyes of their youth fixed on another country across the sea, and train them in the tradition that they are strangers in a strange land, and that the ruling majority is alien to them. An organisation which trains its youth to regard a foreign country as its proper home is not a national asset, and its deliberate effort to prevent fusion of elements in the State constitutes a silent challenge to native government.

While those who bore the burden and the heat of the day of battle are engaged in the Council Chamber and elsewhere in seeking constructive solutions to the material problems of nationality, the spiritual side of the latter is being desecrated and outraged by those who play upon the ingenuous feelings of youth. The older generation may have passed away from the enthusiasm of the days of struggle, but that is no reason why the enthusiasm of growing boys should not be saved from the clutches of the skulking conspirator and his thuggish instruments, and directed towards the creation of a civic sense and spirit in years to come. There is little advantage in those who represent the majority of the people perfecting the institutions of liberty if their work is to be undone in the future by the present-day pupils of the destructive school where the sole doctrine is that the wishes of the majority are to be ignored and that patriotism consists in paralysing the motherland.

There is a crying need for a stronger and more attractive organisation. It should be directly under the auspices and control of the Army, the O/C. and Adjutant in each area being Army Officers—its members should be distinguished by a simple uniform and afforded an opportunity of military training and of participation in military ceremonial. We can no longer afford to ignore the appeal of glamour to the temperament of boyhood—and we should avail of it not for the teaching of militarism, but of elementary civics. By association boys

will learn to love and respect the Army and look forward to it as one of their ambitions; their false teachers at the moment impress the view on them that the Army is a standing crime against nationality. They will come to realise that the Army represents what is best in national tradition and is the true inheritor of our past, and that patriotism consists in love of country with tolerance and forbearance towards all under the protection of its laws, and not in blind and murderous hatred of former foe or friend—especially when that friend happens to be a brother Irishman.

Apart from the benefit of military training and association—the beneficial effect on the physique of our youth will be enormous, and a further opportunity will be afforded of spreading a knowledge of the details of hygiene and of so raising the standard of national health.

We do not suggest that juvenile training in ethics is lacking. This is merely a plea—under the compulsion of circumstances—for giving a definite direction and a fixed objective to the moral principles impressed on the mind of our youth from hearth and altar. Indeed, one might even endeavour to begin civic training in childhood by having the slogan “Géill Do’n Dlighe” on every schoolbook and on the wall of every schoolroom in the State.

The year 1211 witnessed the “Children’s Crusade.” 100,000 boys of tender years, the best young blood of mediaeval Europe inveigled into a treacherous scheme which left tens of thousands of them dead on the northern shore of the Mediterranean and sent the remainder as slaves to Barbary and Egypt. They were recruited ostensibly to fight against the Turks, in reality to be butchered or sold into slavery to that very Sultan whom they set out to conquer. Sympathy, not fame or glory, was their lot, and their name has died out of popular tradition unless the Pied Piper of Hamelin preserves a popular memory of their departure, and of parental anguish at their fate. There is something akin to that Crusade in progress in Ireland to-day. It is up to Ireland to save her children from the impending disaster.

EXTRACT FROM

PRESIDENT'S ORATION

AT THE CENOTAPH, AUGUST, 1927.

"Arthur Griffith and Michael Collins are two names that must be for ever linked together in the minds of our people. Each had his individuality of character, temperament, and outlook, but both were alike in great imperishable things, that prevent us from thinking of them separately. Each was the complement of the other.

"A Divine Providence destined that these two remarkable men should be, in the most important periods of their lives, contemporaries. We cannot think of our new Ireland, vibrant with new life and new hope, full of faith born of responsibility in her destiny—we cannot think of this new Ireland without instinctively thinking of Arthur Griffith. And we cannot think of Arthur Griffith without thinking of Michael Collins.

"Griffith gaily lived a life of poverty and sacrifice supported by his intense faith in his own people and his intense conviction of their ultimate triumph.

GREATER THAN RICHES.

"We picture him, with sturdy fortitude sending out week by week from his garret office his message to a slumbering country, and refusing sternly offers that would have brought him those riches to which his undoubted genius was entitled.

"But he was greater than riches, and, often without money for a meal, he would pursue with cheerful courage his self-appointed task—the national regeneration of his own country.

"As a friend has truly said of him, he was a King without a Court, a nobleman without a retinue. He was the very quintessence of unbending self-reliance which he communicated through his teaching, his writings and his example to the generation that followed him. Arthur Griffith was, beyond everything else, the great teacher, the great preceptor.

MICHAEL COLLINS.

"And at the exactly right time there arose from nowhere, it would seem, Michael Collins to put into practice the teachings, to garner the harvest of those thirty long, but fruitful years.

"Collins was surely one of the most extraordinary personalities not only of his own period, but of all time.

"We remember his terrific force of character, his inexhaustible energy and fiercely active intellect. Not content with doing one man's hard work in a day, he essayed the work of ten. There was no current of thought, no interest or activity in the nation's life that he was not familiar with, and few that he was not directing. Ireland, her hopes, her dangers, her future, was ever present to his mind.

A GRAND INSPIRATION.

"He had little time for anything other than the task of urging on his country to victory and success. And this he did, he more than any other individual. Yet in the midst of his work he found opportunity for those many acts of kindness which endeared him to the lowly and the suffering and made him beloved of the little children.

"He lived just long enough to lay, with Griffith, the foundations of the Irish Free State, leaving behind him to his own people a grand inspiration and a tradition as heroic as Cuchulainn's."

THE IMMORTAL THREE.

“ For five years now,” concluded the President, “ we have been engaged in erecting the edifice of State on the foundations laid by Collins and Griffith.

“ We have endeavoured faithfully and without fear or favour to fulfil the trust they left us. We have tried to build securely and well.

“ It has been no easy task, but the blessing and inspiration of our great chiefs has lightened it and made it a labour of love. We have met with many trials and obstacles in the course of that work, but we have continued faithful, as we have conceived it, to our charge.

“ Ireland may not yet have passed through her Gethsemane—but her period of trial nears its close. When she emerges glorious from her long night of suffering, no names will be writ brighter on the pages of her history than the names of Griffith, Collins and O’Higgins, whose labour has been her succour and whose example has been her inspiration in that darkest hour that comes before the dawn.”



[“ An t-Oglach ” Photo.

President Cosgrave delivering the oration from the Cenotaph at Leinster Lawn.



The 9th (formerly 21st) Infantry Battalion marching past the Cenotaph.

["An t-Oglach" Photo.]



Lieut.-General D. Hogan, Chief of Staff, who commanded the parade.

["An t-Oglach" Photo.]



Mr. KEVIN C. O'HIGGINS, T.D., B.A., LL.B., B.L.
Vice-President Executive Council, Minister for Justice, Minister for External Affairs.
Born, 1892: Died, 1927.

KEVIN O'HIGGINS.

An appreciation.

By PROFESSOR HOGAN, M.A.

[T is fully fourteen years ago since I first came to know Kevin O'Higgins. It happened that we were both students of University College, Dublin, and, to the best of my recollection he was then attending lectures at 86 St. Stephen's Green, where, until quite recently, the Faculties of Law and Arts were housed. To tell the truth, in these days my acquaintance with Kevin O'Higgins hardly went further than bidding him the time of the day. He belonged to the elder generation of students; for with every three years or so a new generation of students arises. He was in this, his final year, a prominent man amongst the students, whereas I was then more or less a newcomer.

Most University men will, I think, agree that the average undergraduate is apt to attach much more importance to the doings of University Societies and to athletics than he does to lectures. It is not until the examinations loom in sight that he begins to think differently. In these days much the most popular gathering place for the general run of students—medicals, arts men, and engineers—was the Physics Theatre at 86 St. Stephen's Green, where, on Saturday nights, the L. & H.—as we called the Literary and Historical Debating Society—used to hold its meetings. Eight o'clock on a Saturday evening would ordinarily find the Physics Theatre—really a rather small lecture room—crowded to the doors, although nine out of every ten of the students present came simply to look on. It was usually well worth while, as almost everybody of any note in University life put in an occasional appearance to take part in the debates.

Kevin O'Higgins was not a committee man. He preferred to be in opposition, and besides, being a prominent member of the Law Student's Debating Society, he did not attend the L. & H. regularly every Saturday night. He was considered one of the wittiest speakers in the University, and on that account the noisy audience ranged along the benches, who had come to be amused as well as instructed, always greeted his arrival boisterously.

Apart from the fact that he could always be depended upon for an original and witty contribution to the debate, he had the knack of making things lively for the Committee. He was most noted as an impromptu speaker. A good impromptu debate was rare enough, since comparatively few speakers were able to rise to the occasion. O'Higgins was one of the few who could nearly always develop on the spur of the moment a humorous or satirical train of ideas. A student audience can be very fastidious and hard to please. I think what we liked about O'Higgins' speeches was the strain of satire or the ingenious parody running right through them. Even in those days his style of delivery was characteristic. Leaning forward, with his hands in his pockets or clasped on the edge of the bench in front of him, his words came slowly and with a deliberate and increasing emphasis as his argument developed. He never spoke wildly or at random. Despite an air of unconcerned and humorous comment he was, even in an impromptu speech, always leading up to a definite point.

In 1914-'15 the rising national impulses were astir in the University, as elsewhere, and early in 1914 a number of University students commenced to be eagerly interested in one or other of the aspects of the Volunteer and Sinn Fein Movements. One of the first to move in this direction was Kevin O'Higgins. From 1915 onwards he was actively associated with the Sinn Fein Movement, and if I am not mistaken, early in 1915, together with a friend of his—an engineering student and a well-known hurler—he was arrested on a charge of obstructing the

recruiting authorities. Strange to say, about the same time one of his brothers joined the Army. Kevin O'Higgins and his friend did not become any more popular because of their arrest. The majority of their fellow students were inclined to regard them as a pair of irresponsibles. In fact, in 1915, separatists were scarce enough even in the National University.

The year 1917 saw Kevin O'Higgins become a force in the national movement, which was now rapidly moving to a crisis. He was then twenty-six years of age; active and sane, determined and ready to do his part in the struggle for independence which was at hand. In comparison with earlier national movements, the achievement of the movement of 1916-21 has been so great that there is a tendency to assume that the generation which accomplished the revolution of 1916-21 must have been a race of giants. I believe that everybody who has known the period from within will agree with me that this is a retrospective illusion. I feel sure that it would be much nearer to the truth to say that while the present generation produced three or four men of supreme character and ability, and many courageous, honest, and devoted men, on the whole it has not been a much more competent or remarkable generation than that which preceded it. The truth is that supreme ability is always rare. To the calm and critical scrutiny of the future historian it may well appear that the only individuals who emerge from the Anglo-Irish struggle unmistakably their own masters and the masters of events are Griffith and Collins. In other words, they are the only two men who can be said to have decisively and permanently moulded the events of their period. Applying the same test, I have no doubt that in Kevin O'Higgins the future historian will discern the master spirit of the period from 1922 to 1927, a period as momentous in its own way as the preceding one.

Long before the Truce, O'Higgins' ability and independence of character had come to be recognised and valued by his colleagues, with the result that on Mr. Cosgrave's arrest in 1920, Kevin O'Higgins was appointed to fill his place as Minister for Local Government. Afterwards, when Mr. Cosgrave was released, he went back to the position of Assistant Minister. In order not to lose the benefit of his advice he was, however, co-opted on the Executive Council, and thus was intimately associated with the critical decisions which led up to the Truce and afterwards the Treaty. Incidentally, it may be noted that by Kevin O'Higgins' untimely death the future historian has lost an invaluable witness for the inner history of this very important period. There are, no doubt, three or four men still living whose association with the development of policy was as close as his, but I venture to doubt whether anyone is left to give quite as full and detailed a narrative of the time as Kevin O'Higgins could. For not only was he naturally watchful and observant but, what was equally necessary, he possessed a really unique memory. Indeed it was quite a usual thing to hear him recall almost word for word a conversation or expression of opinion that would have gone clean out of everybody else's head perhaps for years.

If I may express the view that for the full development of Kevin O'Higgins' special qualities peaceful and constructive, as distinct from revolutionary and, therefore, destructive tasks, were well needed, it does not in any way detract from the ardent and useful part he played in the revolutionary struggle from 1917 to 1921. It is merely an expression of the fact that his natural bent was creative; that he belonged to that comparatively small number of men who are nation builders, born and bred. He possessed precisely the qualities of character and intellect of which the nation was to stand most in need in the times that were coming, for the Truce of 1921 was to bring immediately in its train grave and even menacing preoccupations.

It is no exaggeration to say that almost from the first day the Truce was declared there occurred a series of disquieting developments. Within two or three

months lawlessness and indiscipline had raised its head within as well as without the revolutionary movement. To the reflective mind it ought to have been only too evident that in fact certain elements in the revolutionary movement were getting dangerously out of hand. Had we only realised it, these numerous and flagrant breaches of the Truce boded ill for the future welfare of the country. Had we been in a mood to attend to the warnings of history we must have recognised in these occurrences the symptoms of incipient anarchy and the approach of the nemesis which lies in wait for the nation that has overstepped the bounds of morality, and does not recollect itself while there is yet time.

Unfortunately, on the whole, both leaders and people had become so inured to scenes of violence that they failed to grasp the full significance of what was happening. Some few of the most responsible leaders did, however, realise the seriousness of the growing disorders. Kevin O'Higgins was one of these. He saw sooner than most men, more accurately than any man, the signs of coming trouble. "If men," he used to say, "refuse to respect the Truce, what degree of obedience are they likely to render to their own laws?" Again, I remember hearing him say on another occasion: "As hard as it was to start the revolution, it may be harder to end it, for some of the gifts of revolution are the gifts of the Danaï, and contain the germs of death." Prophetic words indeed! Words that were to come true sooner than any of us then imagined.

I know of no period in the history of modern Ireland more worthy of careful attention than the period between the conclusion of the Truce in July, 1921, and the outbreak of the civil war in the following year. For in this one year decisions affecting the whole future history of Ireland were taken, and at the same time our nerve, character and capabilities as a self-governing people were put to a severe test. A more difficult task than that which then confronted the young Irish Government can hardly be conceived. The old order of things had fallen: the old machinery of government had broken down, while the new had not yet been erected; justice, finance, the army, administration, were non-existent or in the first stage of organization. Far more serious than any of these deficiencies was the moral ferment in which the country was simmering, and the spirit of lawlessness and unrest which is the inevitable aftermath of revolution.

A peculiar feature of the time is that it was after and not before the Truce the war fever really entered the blood of thousands of men and women in all parts of the country, especially in those parts which had come off lightly from the Black-and-Tan terror. It was, I suppose, to be expected that in proportion as the dark days of 1921 receded in the memory, there would tend to glow up an unreal and artificial attitude of mind in regard to the situation out of which had arisen the necessity for entering first into a Truce and afterwards negotiations for peace with England. It was the most natural thing imaginable that, in the first flush of exultation at having forced a mighty empire to terms of truce, the rank and file volunteers of the country should tend to conceive possibly too high an opinion of what they had accomplished and could hope again to accomplish by force of arms.

This state of feeling among the young Volunteers rendered it all the more necessary that their leaders should retain an exact sense of proportion; that they should remain as cool, deliberate and calculating in peace as they had been in war. While it must be admitted that the men who were the real driving force of the Volunteer Movement from 1916 on, acted with commendable judgment and restraint, on the other hand unfortunately they included not a few of the men who sowed with both hands the dragon's seed of civil war in the early months of 1922.

During the feverish summer months of 1921, and again in 1922, no man set a better example of self-restraint, and no man exercised a more steady and composing influence than did Kevin O'Higgins. I doubt if it were possible to

throw Kevin O'Higgins off his moral balance; for he belonged to the rare class of men who can be depended upon, whatever the emotion, to retain their self-composure, and who, for that reason, rarely fail to see things as they really are.

From the Truce onwards, he and Arthur Griffith were thrown a good deal together, with the result that in a very short time a genuine affection grew up between them. For Collins, Kevin O'Higgins had always cherished an admiration almost passionate in its intensity. Hence it was with a certain degree of personal sympathy that he followed the progress of the peace efforts of Griffith and Collins in London, in the autumn of 1921. He knew, as every thinking person then knew, that there was a limit of concession beyond which no effort of ours could drive England. A remark I once heard him make in this connection is, I think, worth recording here: "While we can be sure that Arthur Griffith and Michael Collins will secure essential liberty and obtain the most favourable terms possible to obtain in respect of North-East Ulster, there is no good expecting them to work miracles—the stream cannot be made to run uphill all at once." If he, for one, was satisfied with the terms they eventually brought home, it was because in the first place they seemed to him to embody the essential conditions of liberty, and in the second place because they appeared to offer the only sure means of bringing about Irish unity.

I need hardly remark that the issues raised in the Treaty debate were faced in a very different spirit by many of the deputies of the Dáil. One need but glance through the parliamentary reports to realise in what a maelstrom of calumny, cross purposes and cowardly evasion of the real issues the Treaty was debated. There were, however, a number of men who, amid all the confusion of voices, kept clear before their eyes the unvarying factors of the whole national situation. Kevin O'Higgins was one of the foremost spokesmen of this little band of men. If ever there was a test of moral courage it was the time of the debates during and subsequent to the Treaty settlement. "There are times," as he himself said in 1922, "when it needs more courage to face facts than to face machine-guns."

Next to Arthur Griffith and John MacNeill, Kevin O'Higgins possessed the most developed historic sense amongst the men of 1921-22. To judge by the utterances of not a few of the men who assumed to themselves a ruling influence in the direction of affairs, one would suppose that the Irish nation had began, if not in 1918, at the very earliest in 1916. It was by no means uncommon to hear names which were held in honour by our fathers and grandfathers as the names of great Irishmen, bandied about as unceremoniously as if it was self-evident that Ireland had never before bred a great man. The contempt for Irishmen, great in their own generation, as for instance, Daniel O'Connell, is a good example of the somewhat ignoble temper of mind which in no small degree pervaded the deliberations of the Dáil from December, 1921. A dangerously superficial frame of mind at all times, contempt for the past and the great men of the past is especially so when it exists in men called upon, as were the men of 1921, to come to vital national decisions, decisions which in the nature of things, were bound to be the root of the most far-reaching events.

Arthur Griffith, who knew the history of 19th century Ireland as thoroughly as if he himself had lived through it, resisted this tendency to brand the past as a record of betrayals, because he saw that in its essence this was a denationalising tendency. Instinctively, Kevin O'Higgins felt the same dislike for these wholesale condemnations of the men who had, according to their lights, and in the exigencies of their time, done their best for Ireland. More than once I have heard him insist on the importance of the fact that the national movement of 1916-21 was really the outcome and culminating point in a process of resurgence dating back to the first decade of the nineteenth century.

From constant meditation upon the religious and political history of Ireland

he had come to acquire a clearer vision of the whole field of historic forces and a more accurate insight into their range and strength than any man I have known. He realised there were limits to the endurance of a people. Lest we should make the fatal mistake of putting an excessive strain on the resources of the nation's moral and physical strength, we should always bear in mind the "grim upward struggle" to quote the phrase, which on more than one occasion O'Higgins employed to describe the gradual recovery of the race in the 18th and 19th centuries. Hence, in striking contrast to the frenzied talk of Ireland as a nation destined for ever to tread the way of the cross, Kevin O'Higgins was acutely alive to the necessity of what recently has been well described as a "strategic halt," a period of repose, in which the nation could consolidate its gains and even practice the virtues of discipline and order, without which "liberty is but a vain and dangerous word."

Without the historic instinct, or at least without some feeling for tradition, it is hard to imagine a really sane and well-balanced national outlook. Fortunately for Ireland, in Arthur Griffith, Michael Collins and Kevin O'Higgins, the authentic national tradition was inbred and all powerful. It has been observed that nature occasionally produces a man in whom all the best characteristics of his ancestors are united. Kevin O'Higgins is the most remarkable example of the power of heredity that has come within my knowledge. To which side of his ancestry he owed most, it is not easy to say, for on the one side his mother was a daughter to one of three brothers whose names were amongst the most honoured in Ireland for fully half a century; on the other he came of a stock that had in days gone by given distinguished men and women to the service of the church and the country. Personally, I do not think I have known another man whose instincts were so entirely national, or one whose heart was so wrapt up in all things affecting the greatness and honour of his country. It was but indicative that "my poor country" was a thought that came frequently to his lips in the hour before he died. A pure, strong and compassionate love of country is perhaps rarer than we might think, but no man who knew them can doubt that in Collins, Griffith and O'Higgins Ireland was endowed with men whose one thought was their country and their country's honour. Hence distinct and marked as was the individuality of each, their political method was none the less fundamentally the same. They always strove to oppose individual passions, to counteract the workings of cowardice, vanity, and egotism with the idea of the Motherland, not a vague and abstract Motherland, but the actual tangible Ireland possessed by the living generations. In obedience to the instincts of their fundamental nationalism this was their invariable method in the critical months that followed the acceptance of the Treaty. That this method did not wholly succeed, for its complete success would have averted civil war, is the measure of how much and how little true patriotism existed even in the very parliament that had been cradled in revolutionary sacrifices for the idea of nationality.

When on the 7th January, 1922, the decisive motion on the Treaty was taken, it was obvious that the next step was to ascertain the wishes of the people. Kevin O'Higgins was one of those who held, in the great issue of policy that had now arisen, that no time should be lost in giving the nation itself an opportunity to decide. All during these months he continued to reiterate, as a fundamental political principle, that ultimate sovereignty lay neither with the Government nor with the Dáil, but with the whole body of the people. However, on one pretext or another, the opponents of the Treaty sought to defer a general election; offered a plebiscite, they declared it unworkable.

But before very long it became clear that certain men would resist by force any attempt to have the people decide whether or not they desired the Treaty. It was at this stage that the situation became pregnant with the gravest menace, not only to the present peace and well-being of the country, but to its entire future

development along democratic lines. That the gravity of the issue was not immediately and generally apprehended is not so surprising when we recollect that in Pre-Truce days the Dáil had been constrained by circumstances to sanction the creation of what was in form hardly distinguishable from a military dictatorship. The result was the growth of distinctly dictatorial and even anti-democratic tendencies here and there throughout the country, more especially amongst the Volunteers who had been enrolled in the period of the Truce. There can be hardly any doubt that the widespread growth of such tendencies contributed in no small measure to weaken the sense of the importance and sacredness of the sanctions which invest the civil authority. The necessity for counteracting the spread of such fatal tendencies would have been more generally realised were it not for the fact that most men were reluctant to entertain the idea, even as a possibility, that from their former comrades was about to come an armed challenge to the right of the nation to decide its own destinies.

Kevin O'Higgins was, however, the last man one could imagine living in a fool's paradise. He and Arthur Griffith, possibly earlier than any others, appear to have grasped the full and far-reaching implications in the refusal of a minority party to allow an appeal to the whole body of the people. It is greatly to their credit, and will, I believe, greatly enhance their reputation in history, that they were the first explicitly to state that the issue of democratic rule was one which transcended all others. Time and again in the years that followed, we find O'Higgins stressing, as a fundamental political principle, the supreme power of the whole people to control, to maintain, and if they thought fit, to change the national policy. On this issue he was stern and inexorable; on all else he kept an open mind.

His belief in an Irish democracy was absolute and unhesitating, not that he was unaware of the weakness inherent in every democratic system of government. On the contrary few men have been more acutely conscious of the difficulties that beset the democratic form of government. While he was sufficiently detached to be able to apply a penetrating criticism to the sources of his political beliefs, as a rule he avoided abstract discussions, naturally preferring to discuss facts and immediate impressions from life. I have, however, a distinct recollection of one of the few occasions on which I heard him express his point of view towards democratic doctrine. He could be most persuasive in talks like these. On this particular occasion he argued that there was really no thread through the enormous complexity of modern systems of government other than the idea of the people's sovereignty, and went on to point out that in any case we, as a people, were committed to the democratic idea, that to repudiate it would really amount to destroying the moral basis upon which rested our claim to nationhood as well as invalidating all the sanctions by which we were justified in having recourse to arms against England. Moreover, he was convinced that what lent irresistible strength to our struggle for independence and enabled us to do miracles was the profound conviction we felt—and could therefore infuse into others—of having on one side the great christian principle that all political authority is derived from God through the people.

Kevin O'Higgins, more than any other man of his time, grasped this idea and made it his own. Hence the appeal to political first principles to which his public utterances show him to have been so addicted! Hence his anxiety during the civil strife that the people should be brought to realise that this was their struggle. It is surely a strange irony that the man who strove to uphold this great and catholic conception of human society in a world abandoned to pagan policies and deeds, should have been struck down in the most Catholic city of the most Catholic land in Europe.

When the history of our time comes to be written, the historian will, I venture to think, single out the first fortnight in the August of 1922 as perhaps the most

critical, the most dangerous moment in the development of modern Ireland. Arthur Griffith died on 12th August, 1922. Ten days later Michael Collins was dead; the greatest Irishman of his generation was laid low by Irish hands in the hour of a national triumph, than which there had been none greater since Brian's victory at Clontarf almost a thousand years ago. From the national standpoint no graver misfortune could have befallen the country than the loss in quick succession of Griffith and Collins. Kevin O'Higgins was the first in Government Buildings to receive the fatal tidings of Collins's death at Bealnablath. About midnight he took the message across the 'phone from Portobello Barracks, then the Military Headquarters. He communicated the message to his colleagues in steady tones and with outward composure, but no man felt the cruel and terrible tidings more than he did. For Michael Collins was the one man in the national movement for whom his admiration knew no bounds. The manner in which Michael Collins had been treated on his return from London, in December, 1921, was for Kevin O'Higgins at first an inexplicable riddle and then a source of sorrow and pain. Knowing every circumstance which led up to the negotiations, and realising in what a bold and splendid spirit Collins had shouldered the thankless task of the peacemaker, Kevin O'Higgins' heart went out to him when in December, 1922, he returned home to find himself a butt for every form of deceit and treachery. It is very characteristic of Kevin O'Higgins that what always pained him even more deeply than the circumstances of Michael Collins's death was the memory of mental torment which Collins had suffered during the months in which he struggled in vain to avert the civil war he saw approaching with inevitable steps.

These were indeed days of bitter disillusionment for all who cared for the good name and future of an Irish nation, a disillusionment which few can have felt more keenly than Kevin O'Higgins, for by a natural impulse of the man he was always prone to attribute to others a character like his own, with the same purity of motive and the same sense of justice. But things would need to be utterly hopeless before one could imagine a man of his character yielding even for a moment to counsels of weakness and despair; on the contrary, he steadily combated the tendency to pessimism about the future and cynicism as to the national character, which was spreading like a contagious blight among the people in 1922-23. He used to say that all this was really nothing more serious than a superficial reaction from the revolutionary exaltation of the period that was passing away, and that he, for one, felt sure that in the depths of the national spirit there lay an accumulated store of genuine strength and idealism which in the fulness of time would be brought to light. In this unwavering faith in the people, in this conviction that a great future must surely be reserved for a race that had in the past displayed such a marvellous and victorious tenacity of will, Thomas Davis would have acknowledged a vision as intense as his own, but even better balanced.

Doubtless Kevin O'Higgins must have felt more profoundly than he ever betrayed, the overwhelming burden of responsibility which in the autumn of 1922 devolved upon himself and a few other young and comparatively inexperienced men. But whatever he felt he betrayed little even to his friends. He pursued relentlessly the immediate task of the time, the one task for which more than any other he was fitted. For justice and anarchy had now joined battle, and Kevin O'Higgins, in whom justice was personified, proved to be the stronger, because to anarchy he opposed an intense moral energy wedded to an innate love of order. Courageous in the ordinary sense, he also possessed the rarer kind of courage, courage in face of the unforeseen, the courage which requires presence of mind and an unperturbed judgment.

But it must not be supposed that the task came easy to him. While he accepted the responsibility without an instant's hesitation and without a doubt as to the eventual issue, he was a man of warm and tender sympathies, and it is

such men as he, haters of violence, who are quickest to feel all the sufferings that make up a civil war. If he was stern his sternness was self-imposed.

From these years of civil war he emerged a new man; he had acquired a new power over himself and over others. Those who knew him from this period on knew a different man; an increased seriousness and dignity of purpose were evident in him. His character seemed made of iron, as if hammered into shape by inborn and inward force, so that nothing could break, nothing could bend it. "The man grew according to the need." As yet in his early thirties, his judgment was as ripe and mature as if he had grown grey in the service of his country. There had always been a slightly melancholy strain in his temperament. It was, I think, the secret charm which all those who came close to Kevin O'Higgins will have experienced. As he grew older this slightly melancholy, even wistful, strain in his character became more pronounced. Yet at all times his irresistible sense of humour was quick to assert itself. Into those fine and expressive eyes would steal a quizzical or challenging light, the sure forerunner of the deadly phrase or mocking epigram for which he was so dreaded.

O'Higgins was not in the ordinary sense a popular man. The man, be he statesman or dramatist, who chastens human foibles never is. I think that it can hardly be gainsaid that his memorable powers of satire and wit made him many enemies and gained him few friends. Men will forgive anything except to be made ridiculous, and of all the emotions, probably the most implacable, certainly the most vindictive, is wounded vanity. But this is not the only reason why men of the type of O'Higgins are so often the most misunderstood. For one thing, they seldom choose to explain themselves; they think it waste of time to take notice of hatred and calumny. For another, not only the evil-doer, but as well the whole host of self-seeking persons who are found in any and every movement, instinctively dislike those who pitilessly tell the truth, scornful alike of all cliques, menaces and revolts. Moreover, in the nature of things, men of the character of Kevin O'Higgins are always given the most dangerous tasks, and therefore work to a certain extent in isolation. It is the way of the world that their very virtues provoke against them innumerable petty enmities. Thus it was that by the weakling as well as by the criminal, the hue-and-cry was raised around the most beautiful and heroic character of this or of any generation of Irishmen, and raised only too well.

While O'Higgins was always a persuasive debater, and could when the occasion demanded rise to rare heights of eloquence, yet one had to see him in conference in order to arrive at a true estimate of his powers. He was, I imagine, without any exception the most potent personality across the conference table that this country has produced or is likely to produce for many a long day to come. Dialectical brilliance of itself does not go very far either in council or in conference; personality counts for much more, for when men meet face to face to decide on matters of vital concern, matters on which they are perhaps deeply divided, at no time is force of personality more certain to make itself felt. Early in 1922 Arthur Griffith recognised Kevin O'Higgins' natural aptitude for the tasks of negotiation, and from that time onward he was entrusted with practically every major foreign negotiation in which this country was concerned. The value of his services in this respect cannot be known and estimated until the history of Ireland's foreign relations from 1922 to 1927 comes to be written. But of this we can be certain, that the historian will render in full measure to the memory of Kevin O'Higgins the credit which was either totally unacknowledged or grudgingly conceded to him in his lifetime. In this connection it may be noted that while O'Higgins' work was, to say the least, incompletely acknowledged at home, abroad the exact opposite was the case. At Geneva, as in London, it was recognised that in O'Higgins, Ireland possessed a spokesman that would have done honour to the first nation in Europe. It is perhaps prudent to delay one's praise of a great

man till after he is dead, for so long as his life lasts there is a danger lest such praise may become the occasion of controversy. But there can be little doubt that had Kevin O'Higgins lived he would have gained for this country a place and an influence immeasurably greater than that which in the natural course of events it could ever hope to possess.

Even as it was, within the short time allowed to him, he had done more than perhaps will ever be known, to obtain for his country international recognition which it has so long claimed. It was fated, however, that he should be struck down in the broad light of noonday, leaving his work uncompleted, and carrying to the grave immeasurable possibilities of service to Ireland in years to come. It is only now that we can begin to form some estimate of what his loss means. It is only now we begin to realise that his murder was symbolical of the evil spirit that had struck so fiercely at the nation's life. Indeed, it is not too much to say that by his life and his death Kevin O'Higgins seems to have been designed, as it were, to redeem the nation from the spirit of anarchy.

It is not easy to surmise in what respect Kevin O'Higgins will be most missed out of the country's life. Personally I am inclined to believe that where we will miss him most is in regard to the problem of North-East Ulster. Since the Treaty of 1921 it had been his settled conviction that in the solution of this problem lay the most important and most urgent task of the future. He held strongly that a solution was within the reach of the present generation, but he was equally convinced that time unaided would not solve it. In fact he seems to have been of the opinion that the solution might be the more difficult the longer it was in coming, hence he did not delay his efforts to find a solution.

I suppose no public transaction of recent years has been the subject of more persistent censure and misrepresentation than the Tripartite Ulster Pact of December, 1925. This pact, which was in a sense a personal triumph for Kevin O'Higgins, who had entered the diplomatic field at the eleventh hour, has not received the consideration it deserves. Kevin O'Higgins was convinced that the Tripartite Pact would fully justify itself in the future. It is worth noting that an eminent French critic and an old friend of Ireland's recently expressed a similar opinion. "To pave the way to union as well as to ameliorate the lot of the Catholics of Ulster," wrote M. Paul Dubois, "there is only one possible policy, the 'Entente' which inspired the Tripartite Agreement. This is not, as has been contended, the death warrant of Irish unity, but the best means of working for its revival . . . if one day we see Irish unity restored it will be the beneficent result of the work of conciliation and co-operation for which the pact of December, 1925, will have furnished the primary and the necessary opportunity."

At the Imperial Conference last autumn he initiated a further move in the direction of Irish unity. Nor did he let matters rest at that. Meanwhile he was working out in his usual deliberate and systematic way what he considered would be the true basis of a unification policy. Before his death it had come to be, unless I am much mistaken, a settled conviction with him that in any final settlement it was essential that the North-East should come spontaneously part of the way to meet nationalist Ireland. He had reason to believe that this was not by any means as remote a contingency as was generally thought. In this connection it is worth noting that during the last two years he had been making a close study of the period of Grattan's Parliament, reading with particular attention all the autobiographies and memoirs of the period upon which he could lay his hands. In fact, it would appear as if he was definitely coming round to the opinion that Arthur Griffith's approach to the problem of Irish unity was the correct one. Whether I am justified in attributing such definitely formed ideas to Kevin O'Higgins, of this we can be sure, that in character and in temperament he was the ideal negotiator with North-East Ulster—so much so that it is to be hoped his death will not have the effect of putting off unification for another half century.

Although unfinished, his work was none the less immense. He has indeed been the man necessary to end the Revolution for Ireland, and to lead her to the new age in which she can play a part worthy of a once magnificent past. For in these far-off ages, when Ireland was last a nation, with freedom of action and a distinctive way of life, she was one of the chief sources of European civilisation.

Political forms will, no doubt, in the future as in the past, come and go, but basic and permanent ideas such as the ideas of order and justice will subsist so long as Christian civilisation itself subsists. It fell to Kevin O'Higgins' lot to uphold and assert these ideas in a time when they had become obscured and appeared to be forgotten. By word and example he set himself to restore and strengthen these ideas in the mind of the individual as well as in the general social consciousness. It was a difficult task; our past history rendered it doubly difficult, for in our country the idea of law had been weakened and corrupted through association with an alien system of government. From the point of view of the well-being of society as a whole, possibly the most evil effect of political servitude is the undoubted tendency it has to debase the idea of law in the people. When a people are in a state of subjection to another people, law and justice will be so frequently at variance that the subject race will come to regard the law as the symbol of their servitude, and therefore as a detestable thing. The danger is that the prejudice against legality in all its manifestations may have become so deeply ingrained in the people as to persist even in the face of free institutions.

A country that has just emerged from political servitude and is fresh to the practice of self government, readjusts its ideas slowly and painfully. Respect for law and governmental institutions, even though they are known to be derived from national sources is a comparatively slow growth. It would appear, however, that in some this process of readjustment is singularly rapid, as though the hand of the slave had never touched them. Kevin O'Higgins was one of these. If it be true that allegiance to the majesty of law is the outward symbol of the free mind, Kevin O'Higgins possessed in a pre-eminent degree the mentality of a free man.

But this remark does not convey the full truth of the matter. With the intuition of the true statesman O'Higgins divined the eternal co-relation which exists between law and liberty. He saw, as all true statesmen have seen, that "with law perishes liberty of which it is the life." Of this truth he was possessed all the more powerfully because it had come to him not out of history or out of books, but out of the depths of his own mind and experience. He must have known none the less that this belief in the dualism of law and liberty represents the accumulated wisdom and experience of ordered European society. "By liberty," wrote Bossuet in the 17th century, "the Romans, like the Greeks, meant a state where men were subject only to the law, and where the law was more powerful than men."

If I have said little of Kevin O'Higgins in private life it is because I feel that the time has hardly yet come to do so, and also because I believe that at the present moment it behoves us most to examine the relationship in which he stood to his time and the problems of his time, for in the main these problems belong to the future as essentially as to the past.

In retrospect it seems to me that the main debt of the nation to Kevin O'Higgins is this: That to him more than any other it is due that upon the site cleared by the revolutionary labours of half a century, has arisen a native state, which, with all its shortcomings, none the less contains the potentialities of a higher form of unity and a fulness of national life greater than any this nation has yet known. To him also it is primarily due that one of the greatest and purest ideas which ever drew men together, the great idea of the supremacy of a higher law did not disappear beneath a flood of anarchy, corruption, and folly; that by his heroic

courage and steadfast purpose the conception of a state "where men are subject only to law, and where the law is more powerful than men" is assured for ever in this country.

These were his main achievements as they had been his main ambitions. This was the intrinsic nature of the work which he did, a work never, as I believe, to be undone either by madness or pride, and that this is so is perhaps the one consideration which renders the circumstances of his death less terrible to contemplate. We know what his bearing was in full vision of eternity, face to face with that dread taskmaster to whom the noblest as well as the basest of humanity must at the last render an account. He went to meet his Master with the resigned fortitude of one who knew that he had laid down his life in a great and sacred cause; that he had followed, even to the end, his appointed course.

The history of our race for many centuries past might well turn to gloom any mind which contemplates it in its stern reality, were it not for the element of greatness kept alive in it by those witnesses to unswerving truth, those strong heroic souls "of whom our nation is not worthy, but of whom our nation has never been left wholly destitute." Amongst the foremost of these the future will, I believe, place Kevin O'Higgins.

Whatever one may think or say of England at war, England at peace can challenge any country in the world in respect of the finer human feelings.

—"Politicus" in the *Irish Independent*.

(Apropos of expressing sympathy on the assassination of the Minister for Justice).

“SARSFIELD’S RIDE”

A MODEL CAVALRY RAID.

By COLONEL J. J. O’CONNELL, Army School of Instruction.

(NOTE.—The present article has been written after an examination of all existing written authorities that were available to me. I have gone over the ground myself and sifted carefully local tradition on the subject, which elucidates much that is slurred over in the written accounts. At the same time, local tradition must be regarded as giving the facts as they appeared to residents; they do not necessarily give the view-point of a Cavalry Officer. This is especially the case as regards the practicability of routes through the Slieve Felim Mountains, etc. My personal view is that there must at all times have been several routes practicable for horses through these mountains. For example, the terrain has no difficulties comparable to those surmounted by Gen. Jouinot-Gambetta in Macedonia in September, 1918, with a force much larger than Sarsfield’s. The dates, etc., in the article are those of the period, i.e., Old Style. The distances are in statute miles for facility of reference.

I have been much indebted to the following gentlemen resident at different points along Sarsfield’s route:—Ald. P. O’Brien, Mayor, and Mr. C. O’Brien, Limerick; Mr. Henry Phillips, Glen Cottage, Killaseuly; Mr. Michael Ryan, Knockacapul; Mr. Thomas English, Temple Brayden. Without their kind assistance I should have been quite unable to fix the topography with anything like the exactness essential to a military article.

I am also indebted to Mr. M. J. MacEnery, formerly Deputy Keeper of Public Records, for directing my attention to certain lesser-known written accounts).

WE, his countrymen, have never really studied Sarsfield. We have been told he was “a dashing cavalry officer,” or “a skilful partisan leader,” and we have been satisfied to let it go at that. Just because Sarsfield was able to shake himself free from the routine and the technical prejudices of his age, and fearlessly assume responsibility; just because he possessed initiative, energy, and endurance—the qualities of the partisan chief—for those reasons he was, forsooth, merely a partisan and not really a *general* at all!

Since, therefore, it has been customary to assume that Sarsfield’s actions were the results of chance inspirations, it has never been thought worth while to analyse them critically. And of none of his achievements is this truer than of the destruction of the Williamite siege train at Ballyneety on the night of August 11th-12th, 1690. This is popularly regarded as a sort of achievement of demi-gods—much the same as, indeed, we regard an exploit of Cuchullain or Fionn. No doubt, there was a dashing—and even heroic—side to the achievement; but there was also a technical military side. It is this last which it is proposed to analyse in the present article, the sub-title of which—“A Model Cavalry Raid”—will be found to be fully justified.

THE CHANGE IN CAVALRY IN THE 17TH CENTURY.

The wars in the first half of the 17th century started a revolution in the Cavalry arm. The Polish wars of Gustavus Adolphus; the Thirty Years War; the English Civil War; and the Irish Confederate War, to a more limited extent, saw the first employment of the *trooper* as distinct from the *knight*, and of the saddle-horse as distinct from the “*destrier*.” Attention came to be paid to numbers and training, rather than to individual might and prowess.

Moreover, it had come to be recognised that Cavalry could be appropriately given as part of their armament a fire-arm—either a long-barrelled horse-pistol or a carbine. Gradually it was realised that in certain cases horsemen could dismount and fight on foot; and there were formed Dragoon regiments designed primarily for this type of action.

Finally, by 1690, it was accepted that Cavalry could do much more than merely deliver charges on the battlefield. That had been still their main function half-a-century previously under men like Pappenheim or Prince Rupert, or even under as great a general as Cromwell. But in the intervening years there had taken place the campaigns of Turenne with their numerous lessons. Turenne used his cavalry, not alone to deliver charges, but much more for Reconnaissance, Security, and detached work generally. In short, during the 17th century, Cavalry ceased to be mediaeval and became modern.

SARSFIELD APPLIES THE NEW CONDITIONS TO IRELAND.

Now, as luck would have it, Sarsfield when a young officer, had served under Turenne in the last and most masterly campaign of that great general. He had seen the new way for employing Cavalry and he realised that the same could be done in Ireland. The new conditions, indeed, opened up enormous possibilities for the nimble-witted Irishman and his nimble-footed horse. Sarsfield grasped these possibilities at once and proceeded to exploit them to the full. This is clearly displayed in all his operations in Ireland. Sarsfield, indeed, was much more than a Cavalry officer: he was a true Cavalry *general*, and he brought the latest Cavalry technique into a new, but very suitable, environment.

In Ireland, before 1600, Cavalry had played a relatively unimportant part in warfare. The heavily-mailed man-at-arms, equally with his ponderous "destrier," was totally out of place in the Irish forests and bogs. Yet Ireland was not without certain possibilities in the matter of Cavalry. The Irishman's individualist character—with a dash of the gambler in him—rendered him naturally suitable for a cavalryman.

The other component of the cavalryman—his horse—was also produced from time immemorial of excellent quality. Horse-racing as a sport had been universal from times well before authentic history; and in mediaeval times we have celebrated instances, such as Art MacMurrough Kavanagh's horse in 1400, which "galloped like the wind down the face of the hill." Evidently, the raw material was available in abundance.

MILITARY SITUATION IN AUGUST, 1690.

At the beginning of August, 1690, the issue in Ireland was very sharply defined. The Irish forces, defeated a month earlier at the Boyne, had fallen back entirely behind the Shannon. That river afforded them a strong natural line of defence, only accessible to William's army with considerable difficulty. They hoped to be able to maintain this line intact during the coming Winter, in which event there was the prospect of a more successful campaign the next year. If, on the other hand, the Shannon line was lost, the war was over: there could not be, in that event, any base of operations for 1691.

Conversely, it was vitally important for William to force the Shannon line. If he could manage to do so he, *ipso facto*, ended the war in Ireland, and would be free to turn his attention to the continental theatre—where, so far, he had been less successful. Consequently, while he in person was occupying Leinster and Ormond, he sent Douglas with 12,000 men to attempt Athlone. Douglas, however, failed and marched on July 24th, from before Athlone to join forces with William who was then moving towards Limerick with his main army.

It was towards Limerick that the bulk of the Irish forces had concentrated. The garrison of Athlone, though sufficient to protect that town against a *coup-de-main*, was a comparatively small fraction of the whole Irish strength.

After their junction, the combined Williamite forces amounted to 38,000 men. The Irish force in and around Limerick numbered 20,000 foot and 4,000 horse, of which the Infantry was definitely inferior to the Williamites in armament, equipment, and training. There were thus at length arrayed at Limerick—concentrating towards the decisive point—the main forces of both sides. William had

38,000 men before Limerick and about 10,000 in the rest of the country. The respective proportions on the Jacobite side would be roughly the same. Accordingly there were collected in the vicinity of Limerick all the elements of a decisive struggle.

LIMERICK IN 1690.

Limerick was at this period the second city in Ireland, and the Limerick of the time is still quite recognisable. For those familiar with the city it will help to know that the extensive portion lying south-west of the Sarsfield Bridge—William Street line, did not exist at all in 1690. That area was then covered by open meadow-land. The Limerick of 1690 consisted of the Irish Town, bounded as at present, and the English Town, on King's Island, between the two branches of the river. The English Town covered roughly the southern part of that island, which is nearly a mile long from north to south, and slightly more than a third of a mile broad from east to west. There was a stone bridge linking the Irish Town with the English Town—Ball's Bridge, on the site of the present one of the same name fronting Martin Clohessy's famous hostelry. There was also then as now a Thomond Bridge leading past the Castle into Clare. These were the only bridges in or near the city.

The artificially-raised banks that now confine the Shannon within a definite channel had not been constructed, so that much of what is now reclaimed land was marshy, and—in wet weather—completely flooded. As a result the river was in 1690 an even more formidable obstacle than it is now. Below the city it was a tidal estuary and quite impassable: above—between the city and Lough Derg—there were some four or five points of passage, but none of decisive importance.

THE DECISION TO DEFEND LIMERICK.

Limerick was not a fortress in any strict sense. It had an old city wall, like every town of importance in the middle ages, which is thus described by Berwick: "The place had for its sole fortification a wall without ramparts, with a few wretched little towers without ditches. We had made a sort of covered way all round, and a kind of palisaded horn-work before the principal gate." This defence, such as it was, ran completely round the Irish Town: the left flank resting on the eastern branch of the river opposite King's Island, and the right on the re-united stream below the junction. This was the front attacked by William.

The decision to stand a siege in Limerick was made after serious dispute and difference of opinion. Against defending were the Viceroy Tyrconnell and the Commander-in-Chief Lauzun. The former was old and in failing health, and in any case: "The only military qualities that he had ever possessed were personal bravery and skill in the use of the sword." Lauzun was a favourite of James II., though in the French service. Lauzun—very much a "courtier general"—seems to have been dismayed by the particularly desolate and apparently hopeless character of the Irish War, and it is certain he was mortally uneasy at the prospect of losing the French King's regiments under his charge—which might in his view yet be of use on the continent. The war in Ireland he considered definitely lost. As for his well-known *mot*—that the walls of Limerick could be battered down with roasted apples—it was in all probability entirely thrown away on the Irish, unused to such dainties, and whose apples, if they ever should get any, would certainly be eaten raw. The common view, that Tyrconnell and Lauzun abandoned Limerick and thereby endangered it, is untenable on military grounds. The prospects of successful defence were improved rather than otherwise by the departure of those who despaired of success. What remained was a unanimously resolute garrison.

This garrison had three leaders of an exceptional stamp: the Duke of Berwick, a youngster of twenty, destined to be later a great general; Boisseleau, the Governor, a signal instance of the dictum: "Tant vaut le gouverneur, autant vaut la place"; Sarsfield, personifying Irish national resistance to the invaders.

When Tyrconnell and Lauzun left Limerick for Galway, on August 2nd. Boisseleau proceeded to take stock. He had a sufficiently numerous garrison whose morale had plainly recovered since the Boyne. The raw Irish Infantry—unfit for large-scale field operations—were capable of stubbornly defending works, and of partial sallies, etc. Equally promising was the civilian morale, which ensured adequate labour for the defences and hearty co-operation generally. There were ample provisions of one kind or another, 300 barrels of powder, and the material resources of an important town. The houses were not negligible defensively, “generally built very strong within the walls, being made most of them castle-ways, with battlements.” Boisseleau made the most of all his resources as regards the city itself.

DISPOSITION OF THE IRISH TROOPS.

The main Irish line of resistance was the wall of Irishtown. In front of this Boisseleau had organised an outpost zone with a few small earthworks among the gardens and enclosures of the suburb. The Infantry reliefs and reserves were encamped on King’s Island, at the north end of which was an earthwork of some consequence. The Castle served as Headquarters.

The Irish Cavalry had their encampment very near the site of the Shannon Scheme power station at Ardnacrusha—a very important point by reason of the pronounced hairpin bend made by the river to the immediate south of it. The Irish Cavalry, indeed, constituted a vital factor in the situation. They were probably superior in numbers to the Williamite Cavalry, and were certainly superior in quality, fitness, and leading.

Their encampment was so situated as to directly command the crossing of the river nearest to Limerick, and to effectively flank all the others up to Killaloe. They were also close to the Galway road, which gave freedom of movement northward into Connaught. In this way, Limerick was entirely unblockaded on the Clare side: the enemy, in the words of Berwick, “never daring to attempt investing it on our side nor even to send any party across the river, which is only fordable in some parts.”

There were—going up-stream from the city—the following crossings of the Shannon between Limerick and Lough Derg:—

1. Annaghbeg—now Parteen—at the apex of the hairpin-bend mentioned above, directly commanded by the Irish Cavalry. This was merely a waist-deep ford, and impassable in wet weather. The Williamites had crossed here, but made no effort to establish themselves.

2. Castleconnell, a crossing similar to the preceding. Here there was on the Limerick side an Irish post of 126 men, which held out until August 12th.

3. O’Brien’s Bridge, and

4. Killaloe—were both bridge crossings. These William had seized and held, but they were too far from Limerick to be of any use for investing the city on the Clare side. The River Shannon was thus definitely the line of demarcation between the contending armies.

DIARY OF DAYS FOLLOWING WILLIAM’S ARRIVAL.

Aug. 7th, Thursday.—William reached Caherconlish, 7-8 miles south-east of Limerick, and encamped there.

Aug. 8th, Friday.—He is joined by Douglas from before Athlone.

Aug. 9th, Saturday.—Advances to high ground at Singland, commanding the city from a distance of one mile. Summons city, and reconnoitres battery emplacements.

Aug. 10th, Sunday.—Drives in outlying Irish posts from gardens and enclosures. Opens bombardment with field guns.

Aug. 11th, Monday.—Bombardment continued; garrison successfully replies, making William shift artillery and headquarters.

The two opening days of the bombardment made it clear that Limerick might

reasonably expect to withstand an attack by field guns. Indeed, it is probable that heavier than field guns were available for the defence, having been brought by ships up the river. In addition, a French artilleryman had deserted from the Williamites on the night they sat down before the city (9th-10th), and it was to his information the garrison were indebted for at once locating the batteries and William's own Headquarters on the second day.

THE SIEGE TRAIN.

But the Frenchman also brought another item of news that was still more important—namely that a regular battering and bridging train was on its way to join William before Limerick.

The Frenchman's information was circumstantial as to time, place, composition, escort, etc.; quite circumstantial enough to take action on. The guns were formidable and amply munitioned, the escort none too strong, the train was to reach Cashel the following day—Sunday 10th.

The actual composition of the train was the following:—

6 24-pounder cannon.

2 18-pounder cannon.

5 mortars.

153 wagons of artillery ammunition.

18 metal pontoons for bridging: tools, etc.

12 casks of biscuit.

400 draught horses.

The escort consisted of two troops—80 troopers according to William's secretary, Sir Robert Southwell—of Villier's Dragoon regiment (later "The Bays") and some musketeers—12 "Switzers"—for the immediate defence of the wagons. In addition were the artillerymen and the drivers, the whole under Captain Pulteney. The drivers of that period were invariably hired or impressed civilians, liable to panic on the smallest provocation.

THE PROBLEM BEFORE SARSFIELD.

We have seen that there was a definite possibility of Limerick successfully resisting a bombardment by field guns. But the city's chance of resisting *siege* guns—especially if bridging material enabling William to multiply points of attack were available—was nil. In a few days, at most, all would be over. Therefore, if the place was to hold out, the siege-train must not arrive. If the train must not arrive it must be destroyed en route—there was no other way. Consequently the problem before Sarsfield was *how* to ensure its destruction?

Sarsfield knew that the Williamite convoy would march from Cashel on Monday, August 11th. From Cashel to Cahernarry—William's transport and supply encampment—was over 30 miles, the city being some 4 or 5 further. Thirty miles for a heavy convoy of the kind meant a two-days march on level roads and in fine weather; so that the train would be marching all of Monday the 11th, and Tuesday the 12th. It could be attacked on one of those days or during the intervening night.

Tuesday would be too late; the convoy would be getting too near its destination to be attacked with any reasonable prospect of success. Early on Monday there would be difficulty in reaching and locating it, and there would be a danger of striking a blow in the air. There remained the night of the 11th-12th.

The convoy, parked for the night, gave Sarsfield a definite point of attack. He need not hunt for his quarry; he could have it marked down beforehand. The end of Monday's march must find the train halted within a few miles radius of Cullen—about half-way between Cashel and Limerick, and not quite two miles south-west of the present railway station of Oola.

Sarsfield's decision, therefore, was to occupy a position in readiness on the flank of the enemy's line of march, and within reasonable distance of any possible

halting place of the Williamites. Once in such a position the location of the precise position of the enemy's park was a matter of ordinary scouting. When the park was located, Sarsfield's plan was to approach under cover of darkness and overpower the Williamites by a surprise attack of incredible swiftness.

It is necessary to approach this matter of the decision as Sarsfield had to approach it, *before* the event—not as has usually been the case, under the guise of a legend that has grown up *after* the event. When Sarsfield set out from Limerick he did not know where he would find the siege train: all he knew was the best place to look for it—the place within a few miles of which it must be located. Consequently, Sarsfield set before himself as a definite geographical objective, not Ballyneety nor Cullen, but somewhere in the neighbourhood of Doon. Once there he could find—and keep—the enemy siege-train.

The details of Sarsfield's approach-march evidently must be interpreted in harmony with this decision, and we shall find how many points of local tradition, which at first glance seem to be contradictory, are not at all necessarily so, but rather tend to fit in as so many parts of a well-fitting whole.

THE FORCE TAKEN BY SARSFIELD.

The composition of the force employed had an important bearing on the success of the enterprise. The Irish Cavalry was both numerous and of good quality, Sarsfield having nearly 4,000 men to choose from. Of these he decided to pick the best. The number required to be calculated carefully: if too large, the force would be certain to be observed; if too small, it could not provide the demolition parties needed to accomplish the work with sufficient speed. The number decided on finally was 600—usually described as 400 line and 200 dragoons, and by one authority as 500 line troops and 60 dragoons. The number to a score or so is immaterial—as is the question of which regiments supplied them. The important matter was that Sarsfield selected 600 of his best-mounted and best-equipped men. These and their horses were well rested, fed, and overhauled during Sunday, 10th, and in a high state of preparedness.

To the Irish troopers, and even more especially to the Cavalry, Sarsfield himself, the leader of this force, was an idol with whom they were prepared—and even eager—to go anywhere. This absolute, unquestioning confidence in the leader of the expedition was evidently a factor of supreme importance in carrying out a difficult and risky operation of the kind.

Finally, the most intimate topographical knowledge was available in the person of Sarsfield's guide—Galloping Hogan. Hogan was a famous Rapparee from the district of Doon, in Tipperary, who had already ridden times without number all over the terrain of Sarsfield's march, both by day and night, and in all weathers.



Site of the Ford at Ballyvalley.

It will be clear, then, that Sarsfield's "expeditionary force" as it stood to horse after nightfall on Sunday, August 10th, held in its ranks that reasonable prospect of success which is sufficient warrant for any military operation. Sarsfield, in short, did not set out to work a miracle, but to put a force he had organised and trained to an unusually severe test.

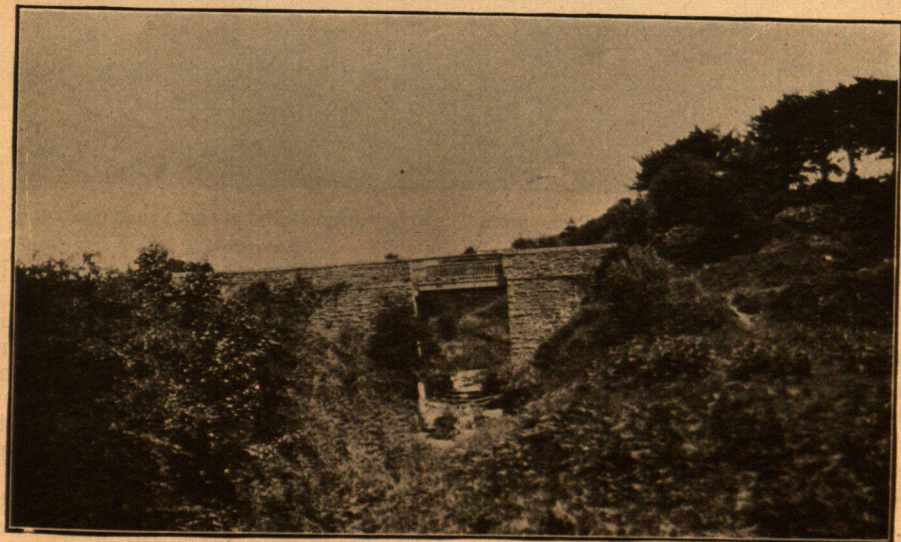
THE APPROACH-MARCH (A).

In the month of August it is dark by 9 p.m., so that Sarsfield could count on six good hours, ample time to get to cover in friendly country before daybreak. He was further favoured by a fine harvest moon, which was valuable to a Cavalry column in that the slowing-up common on a night march did not arise. He could make good time from the start.

The starting-point at the Camp was well back from the Shannon, and Sarsfield kept well away from the river until he approached Killaloe. He followed the road by Harold's Cross-roads-Bridgetown-Ballycorney, between which and the river there intervenes a chain of low hills, while the distance is at the nearest point $1\frac{1}{2}$ miles. Near Ballycorney a young Protestant resident was seized with a view to getting from him the latest information about the Williamite posts at Killaloe.

At Killaloe there were, in addition to the bridge, two other possible points of passage. One was at Clarisford, a mile below the town. This ford was guarded, as well as the bridge. The other crossing was about a mile above the town, near Brian Boru's Fort. There was then no weir, and the river above Killaloe was shallower than at present, and swifter; the ford itself being deep, dangerous and unused—except by men like Galloping Hogan, whose choice would be limited. The Williamites did not know of it at all, and consequently it was left open.

Approaching Killaloe, Hogan led the column diagonally across the fields behind the town, towards Ballyvally, and wheeled towards the right, making for the ford. There was no delay on the bank: kicking his heels into his horse's sides, he took the water at once, and the column followed him, wading two abreast at open distances, and keeping their footing with some difficulty. Once across, there was the sense of satisfaction at having vanquished the first serious obstacle without mishap.



Labbadiha Bridge.

Moving up from the ford, Sarsfield passed round the outskirts of Ballina, holding a south-easterly route. He struck the Boher road at Labbadiha Bridge, where a party of Rapparees was met. This was a sign that from there on the country would be friendly, and the tension of extreme watchfulness could be eased for the moment.

For all that, Sarsfield did not draw rein for another hour or more. He held on due east by Bushfield to Shallee, and there turned south into the mountain district. Moving by Lower Shallee, Crishanagh, Killascully, and Barnabaun, he finally halted in the shelter of Ballyhourigan Wood, at the south-western angle of Keeper Hill.

THE APPROACH-MARCH (B).

The halt at Ballyhourigan was a matter of a couple of hours—a wait for clear daylight, a good rest and rub-down, a meal for men and horses. Before any more prolonged halt was possible it was necessary to first get much closer to the line of march of the Williamite convoy. Starting shortly after sunrise, the column—led all the time by Hogan—held towards the south-east by Toor, Knockfune, Rear Cross, over the Bilboa River, towards the Hills of Doon, in whose shelter the





“Down the glen rode Sarsfield’s men.” The valley from Ballyhourigan to Knockfune.

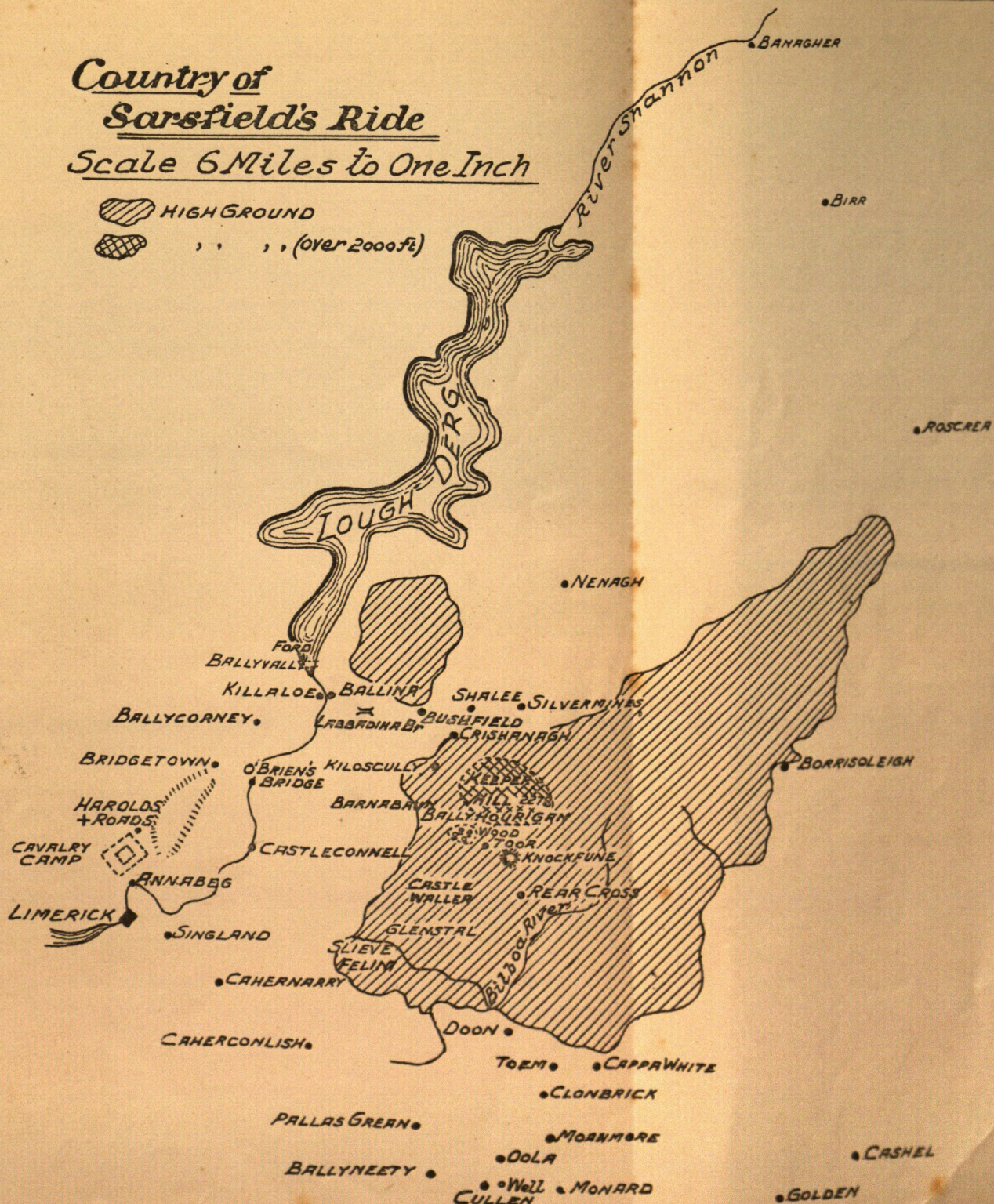
column rested for the remainder of that day—Monday 11th, *i.e.*, for practically the entire day.

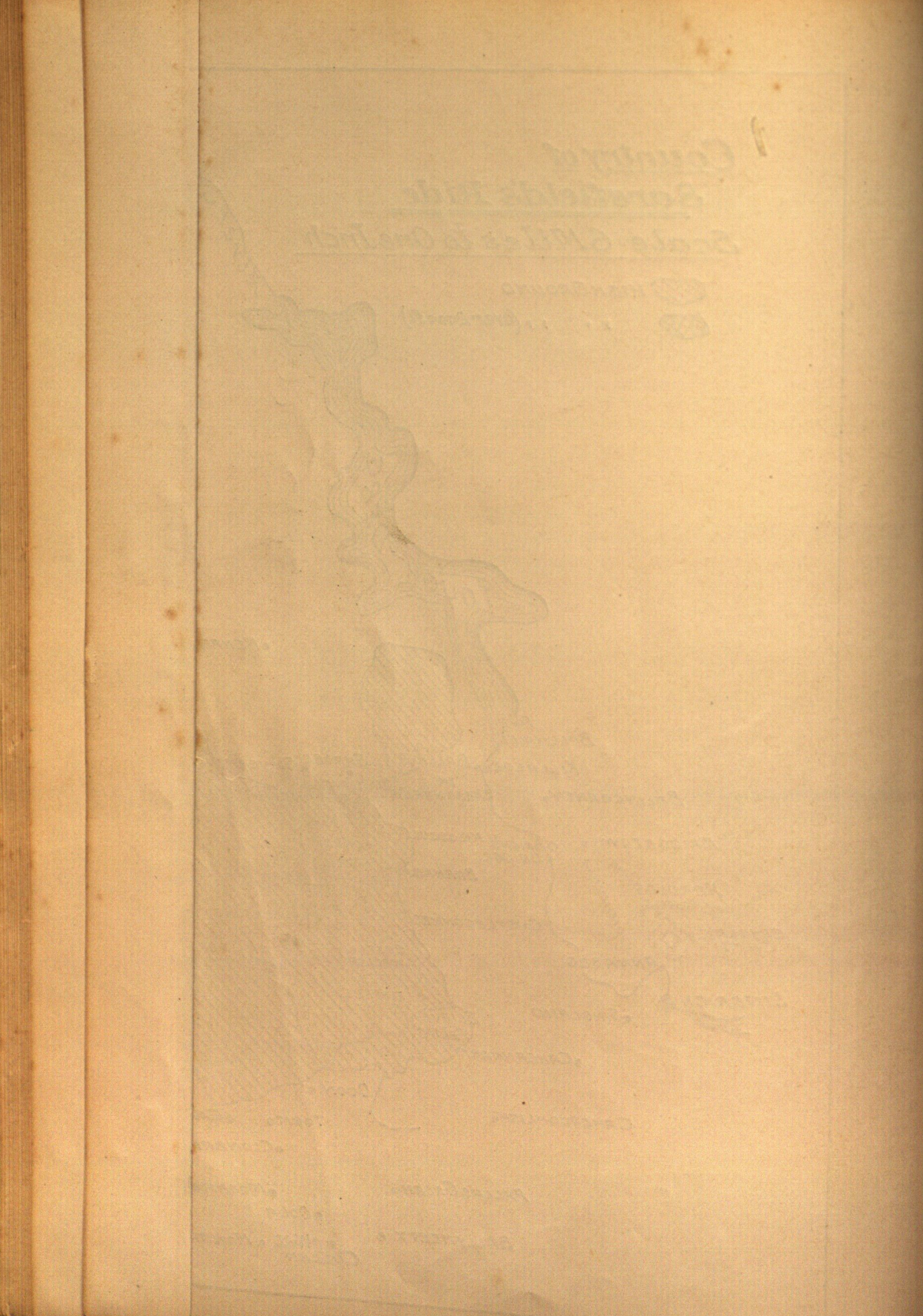
There is a strong local tradition that Sarsfield, on the 11th, took the route round the western flank of the mountains by Rossaguile, Fiddane, Castle Waller, Glenstal. This can be explained on the very probable assumption that the force taking this route was a detachment watching the flank towards Limerick—the dangerous direction. And it is quite conceivable that Sarsfield himself—knowing his main body safe in Hogan’s guidance—took this route, with a view to getting earlier information of any move from Limerick.

This would be quite compatible with an early rejoining of the flank patrol with the main body. Mid-day on Monday, 11th, would have found the whole force assembled within an hour’s ride or so of the Williamite line of march.

*Country of
Sarsfield's Ride
Scale 6 Miles to One Inch*

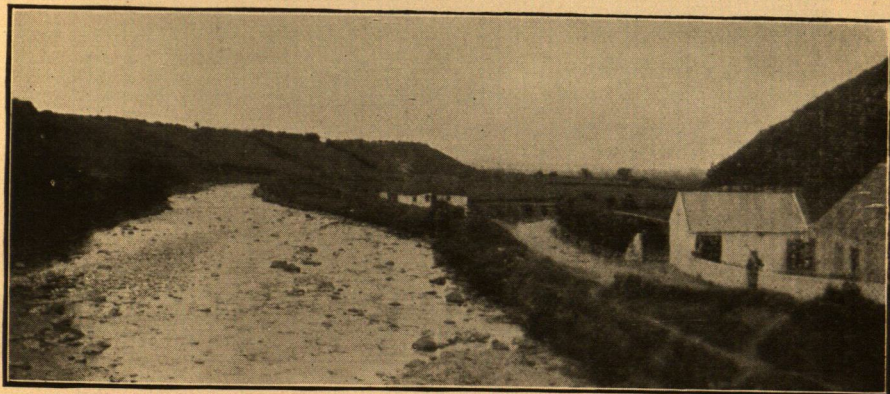
 HIGH GROUND
 , , , (over 2000 ft)





MAKING CONTACT WITH THE ENEMY.

The short march for the 11th was finished by mid-day. The long summer afternoon was free for rest in the Assembly Position. The people among the valleys at the eastern end of Slieve Felim were all friendly, and food for man and horse was provided. Sarsfield could, therefore, count on a well-rested troop for the final stage of his enterprise.



Where the Bilboa River leaves the Hills of Doon.

While the column was resting, Sarsfield had his intelligence service at work: picked regular patrols, rapparees, and friendly civilians—all were utilised. The zone of country southward from Doon and Cappa White at the exit from the mountains was explored—towards Cashel to make contact with the convoy and keep it in view; towards Limerick to ascertain whether the Williamite camp displayed any unusual activity.

No information received would have been of such a nature as to cause any serious disturbance of Sarsfield's plans. The escort was well within his power to deal with, and there was no indication of any move to reinforce it. The ground over which ran the convoy's route is very undulating, and consequently facilitated scouting and shepherding a slow-moving convoy. As a result the Irish scouts were able to keep track of their quarry until it halted for the night. Going over all the circumstances, Sarsfield decided to let the enemy get well settled for the night and attack in the small hours of the morning—when the Williamites would be off their guard, animated by nothing better than what Napoleon afterwards called "two-o'clock-in-the-morning courage." In that way the work of Sarsfield's men would be just completed before day began to break. He would get away from the immediate locality under cover of darkness, and have daylight for his long, hard ride home. No good striking into strange, difficult country in the dark.

THE CONVOY PARKS FOR THE NIGHT.

The siege-train halted for the night at Ballyneety—about 2½ miles west-south-west of Oola, and 2 miles west of Cullen—having accomplished a good day's march from Cashel. They would now be something like 12-14 miles from the Williamite camp before Limerick, and consequently took it for granted that all danger was over. The train was parked on a suitable piece of firm, level ground at the foot of the eminence now known as Sarsfield's Rock, which was then crowned by a ruined castle. The whole attitude was that of men who felt that they had performed their mission creditably and could afford to take things easy. Story describes their action thus: "They encamped on a small piece of plain ground, there being several earthen fences on one side, and the old castle on the other"

thinking themselves at home, so nigh the camp and not fearing an enemy in such a place, especially since they had no notice sent to them of it, they turned most of their horses out to grass as being wearied with marching before, and the guard they left was but a slender one, the rest most of them going to sleep, but some woke in the next world."



Sarsfield's Rock, Ballyneety. The siege train parked on the level expanse in the fore-ground.

Criticism of the Williamite arrangements is easy after the event. The escort was weak; but it was ample to drive off a band of Rapparees. Most of the escort slept; but they were directly in rear of their own army, and they slept by their arms. In short, the arrangements were such as ordinary sound routine prescribed at that period. Neither William nor any of his generals entertained the idea of a far-flung Cavalry raid—it was totally foreign to their experience.

This gives us the real measure of Sarsfield's enterprise, and shows how far ahead of his time he was as a Cavalry Leader. It is not a question of a blunder of William, or carelessness on the part of Captain Pulteney: it was an example of a great Cavalry Leader carrying out a suitable Cavalry mission.

THE ATTACK.

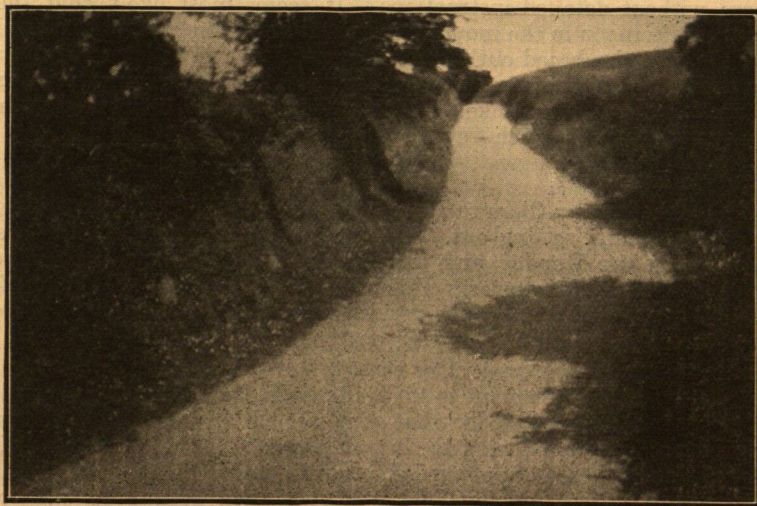
The night of August 11th-12th was not as clear as the previous night. Clouds at times obscured the moon, somewhat facilitating the advance to close quarters. Sarsfield started after the country people had gone to bed, and reached Ballyneety about 2 a.m. of Tuesday, 12th.

The Irish column quitted the Doon foot-hills at Toem, between Doon and Cappa White, and moved due south for half a dozen miles by Clonbrick and Moanmore, to Monard. Here Sarsfield was exactly 5 miles due east of the parked battering-train, and on the road along which it had advanced from Cashel that day. Coming up thus, from their proper rear, his force would be likely at first to be mistaken by the Williamites for friends.

Such was the situation when Sarsfield turned his horse's head for Cullen on the "last lap." And now there befell him one of those strokes of luck that in war only come to those who have already placed themselves in a position to profit by it: the Williamite password for the night was ascertained—and of all possible words it was *Sarsfield*! It did not need a man to be superstitious to take this for a good omen for the work in hand.

It is said that an Englishwoman, the wife of a sergeant, was left behind by her own party beside a well on the road a mile east of Cullen. An Irish trooper who

had fallen behind with a lame horse—or possibly a lame story—made this lady's acquaintance and learnt the pass-word from her, forthwith hurrying on with his information.



The old Hill Road from Cullen, along which Sarsfield advanced after the convoy.

Possession of the pass-word enabled the column to pass an outlying sentinel—apparently at a walk or easy trot. Then, as the prey was neared, the pace was quickened, which seems to have made the inner sentinels suspicious, for one of them challenged twice as the Irish horsemen came up. It was then that occurred the most widely-known detail of the whole operation. Sarsfield's answer to the sentinel was: "Sarsfield is the word and Sarsfield is the man."

But the alarm came too late. The Irishmen spurred in, cutting, thrusting, and firing their pistols. The escort, roused suddenly from slumber, and grabbing desperately for their arms, were quickly overpowered. Some sixty were slain, a wounded lieutenant was captured, the remainder escaped—almost all on foot. The overpowering of the escort was a matter of minutes—almost of seconds; and Sarsfield's men were able to turn at once to the main work of demolition.

WRECKING THE SIEGE TRAIN.

This required the carrying out of serious technical work and an important physical effort, calling for a certain amount of time. To make sure of splitting the guns, they were crammed to the muzzle with powder, wadded hard in, holes were dug in the ground for the muzzles, and the pieces upended into them; the pontoons were stove in and broken up; the wagons of munitions, tools and food drawn together and heaped with baggage: packages of powder placed suitably and loose powder scattered liberally over the whole heap; a train laid and fuse got ready to be lit.

At the same time the horses were caught—400 draught and over 80 troop-horses, the latter "saddled and bridled, with pistols at the saddle bow." Any other portable articles were taken also. The Williamite wounded, apart from the Officer, were carried into some sort of rough and ready safety; and a bugle sent the men hurrying back to their horses, leading the captured remounts. A second blast had them once more in their saddles. The withdrawing column was not well on the march when the great pyramid blew up with a deafening crash, and for a moment the countryside was lit up as clear as day.

Everything had gone like clock-work. The demolition was complete—only 2 of the guns could be used again. It is a pity we have not Sarsfield's detailed instructions for this part of the operation: for evidently there could be no such complete success without detailed instructions. It seems most likely that the long halt on Monday afternoon in the mountains was employed in allotting tasks, detailing parties, etc., for the broad outlines of the operation. The later reports would enable any necessary finishing touches to be given. It was a clear case for explicit verbal instructions; and with picked men, such as Sarsfield had taken with him, it was easy enough to follow such—even at night.

THE ATTEMPT TO INTERCEPT.

It had so happened that a Clare resident who was a Williamite sympathiser, had knowledge of Sarsfield's setting out. This man—one Manus O'Brien—went to William's camp on the Monday and told him that Sarsfield, with an important force of cavalry, had ridden towards Killaloe the previous night. This information puzzled William and was openly derided by some of his principal Officers—at least as regards its having any bearing on the siege-train.

William himself, however, was more careful. He decided that no harm could be done by sending a reinforcement to meet the train, and accordingly detailed Sir John Lanier with 500 horsemen for that purpose. It is said that William gave this order at 9 p.m. on Monday, 11th, but that owing to the remissness of Bentinck, Duke of Portland, it was not carried out until 1 a.m. on Tuesday, 12th. By that time it was too late; for Sarsfield was even then getting to work on the wrecking. Lanier's force had been about an hour on the march and had reached Caherconlish, when they saw the flash and heard the roar in the distance. Lanier wheeled to the left to intercept the return of the Irish at the Shannon crossings; but Sir Albert Cunningham's dragoons, who were encamped in the vicinity, had an encounter with a party of Sarsfield's. The latter lost 1 officer and 15 men killed—the entire casualties of the expedition.

SARSFIELD'S WITHDRAWAL.

Lanier's judicious left wheel met with no success. Sarsfield never meant to break back across the Shannon between Limerick and Lough Derg, but showed himself to the very end a real cavalryman. Having achieved his aim completely, the only thing now was to get back intact. So he decided to put all the long length of Lough Derg between himself and the enemy and made for Borrisoleigh, heading for Banagher—50 miles to the north—where he commanded a passage of the river. There was nothing overwhelming about this. His own horses had been well nursed on the way out, the captured animals, led spare, would ensure that they need not be overworked, and he had something of a start and a reliable guide. As for the men, they were exalted by the consciousness of an astounding exploit; and quite certainly not one of the six hundred cared a curse if he never got back now.

RESULTS OF THE OPERATION.

The moral effect of Sarsfield's operation was enormous. Both parties at Limerick suspected the truth when they saw the flash and heard the explosion. Circumstantial reports came to confirm it the next day. The garrison and people were hugely encouraged, and gave Sarsfield on his return the rousing reception he deserved. As for the Williamites, Story tells us: "This news was very welcome to everybody in the camp, the very private men showing a greater unconcern at the loss than you would expect from such kind of people. The loss of the guns was not so great as that of the horses and ammunition." Indeed, for all the stubborn courage they later displayed in their attacks, it seems certain that the Williamites had no longer much confidence in the outcome of the siege.

It does not come within the scope of this article to describe the siege of Limerick. But as a direct result of Sarsfield's raid the besieged gained one complete week—from Aug. 10th to 17th. An extra week under the technical direction of a man like Boisseleau meant a great deal towards strengthening the defences and improving the troops. Moreover, the Williamite attack had to be made eventually with weaker artillery, with scantier ammunition, without any bridge-equipment. In the circumstances, William could not be certain of adequately breaching the defences, and was in addition restricted to a frontal attack on one side of the river.

Finally, the week was gained at a time when every additional day was of vital importance; because the equinoctial gales and broken weather were coming on. In these campaigns the wet Irish winter was always ruinous to foreign troops. The previous year Schomberg had lost half his army in Dundalk—a place much more easily accessible than Limerick for supplies from England.

In point of fact, William, after this, made only one attack. From August 17th to 27th he pressed the siege with vigour; on the latter date he was bloodily repulsed. On the 31st he struck camp and retreated. Sarsfield's Ride had, indeed, been decisive as regards the year 1690, and had in effect gained a year. More than this could not have been accomplished by any action at this time. Oldmixon, a contemporary Williamite writer, says: "This was not more inglorious to the English than it was glorious to Sarsfield, who got more honour, and did his master more service than all the other Irish or French generals did him, in the course of that war."

It will not be out of place to point out that in one very important respect Sarsfield's Ride emphasises the unchanging character of War. In 1690, only good cavalry could have accomplished such an achievement: in 1927, over the same ground, only the same kind of force, i.e., *good men on good horses*, could do the same. This lesson, in these days of iron and petrol, is worth retaining.

(Since the foregoing was written I was fortunate enough to see in Trinity College Library a manuscript of the period entitled "An Account of Gunns and Ámmunition sent from Dublin and were surprised at Cullen." This Account is very complete and differs in some points from the particulars of the Siege Train set out above. For example, the Account gives all the guns as of one calibre, i.e., 8 "Brass Ordnance of 18." Again it gives "Tinn Boats 6"—but probably this is the same as the 18, assuming each boat to be in three sections. Only 1 "Mortor" is mentioned—a heavy piece of 18 inches for which there were 30 shells and 15 carcasses. Evidently, though, there were available some other high-angle pieces; for the Account mentions "Boombs for ye howith 200." Indeed, the quantity of ammunition was, for the period, very great—800 ball for the 18-pounders, 120 barrels of powder, 16 hundred of match, 5,000 "hand-grenadoes."

The engineering material was also very important—apart from the tin boats—3,000 tools, "a quantity of all sorts of tymber," 94 "wool baggs," a "gynn" or crane, together with block wagons, limbers, spare gun-carriages, etc. In short, the additional information of the "Account" very materially emphasises the importance of Sarsfield's achievement, for the Train is conclusively proved to be such that its arrival at Limerick would have finished the siege in short order.—J.J.O'C.).

THE PROBLEM OF HAULAGE FOR FIELD ARTILLERY

By MAJOR P. A. MULCAHY, O.C., Corps of Artillery.

THE attention of the Irish Army, as of all other armies, is at the moment directed to the problem of deciding the most suitable form of traction for Field Artillery.

Some great Armies are now in favour of tractor haulage for their Field Artillery as against the horse, and are preparing to mechanise many of their field batteries. Should we adopt such mechanical methods?

It is important that this question be viewed from all possible angles, and that exhaustive tests be carried out before our Army be committed to the acceptance or rejection of any particular form of gun-haulage. The method of haulage selected for the Irish Army must naturally be that best suited to this country, and before adopting any new methods we should fully satisfy ourselves that such are more suitable than those already in use.

I am strongly in favour of horse-drawn Field Artillery for our Army, without, at the same time, being prejudiced against the tractor, which must, undoubtedly, be used for transporting the heavier types of guns and howitzers. I am of opinion, however, that the tractor must accomplish far more than has been done at recent trials, before the Army can be committed to the acceptance of such form of gun-haulage for its Field Batteries. The first and foremost duty of Field Artillery is to accompany and support the Infantry, and as long as the Infantry remain on foot, so long must the Field Artillery have that form of traction which permits it to carry out its first duty. The present horse-drawn Field Battery is capable of moving as a complete unit over any ground which the firing battery can traverse, and that means practically anywhere that a body of troops is called upon to march or manoeuvre. The Battery can travel on narrow roads in long columns of mixed, mounted and dismounted troops. It can utilise deep fords and narrow bridges of small load capacity. The Battery Commander can maintain complete control of his unit by riding alongside, at the head or at the rear. The reconnaissance party can detach itself from the Battery and ride ahead without difficulty.

The picture of a tractor-drawn Field Battery in a column of mixed troops on narrow roads is not a happy one. The idea of combining horses and tractors in the same battery is incongruous, and the Battery Commissioned personnel must ride on the gun tractors or in specially provided cars. The Battery Commander has little or no control over the Battery on the move. If he stops to see the Battery pass en route, he cannot reach the head of the column until the next halt. The same applies to the Section Commanders, so that the Battery Commander must, in a great degree, trust to luck that the Battery is coming along safely in rear. A motor cycle would not improve the situation because it could not always pass by the column on narrow roads. Moreover, it would be very difficult, not to mention the effect on the machine, to keep the motor cycle running at a rate to suit the slower-moving column. If a reconnaissance and occupation of battery position were ordered, the reconnaissance party could not leave the column because it would not be possible, as in the case of a mounted party, to travel across country. Again, if the order came to "about turn," it would be quite possible that a tractor-drawn battery could not execute the command on a narrow stretch of road, whilst to a horse-drawn battery this would present no difficulty.

It is said for the tractor that longer distances can be covered during a day's march, but as Infantry and Field Artillery are inseparable for fighting purposes, this has no particular advantage. "On a march the speed is that of the slowest element."



Gun and team fording River Slaney.

["An t-Oglach" Photo.

During Field Training in the Glen of Imaal, County Wicklow, in June and July, 1926, exhaustive tests were carried out with horse-drawn field guns. They were brought across bogs where horses were up to their girths in mud, and the guns sank axle deep, but with horse and man working in unison, the guns were brought safely to solid ground. One particular incident is worthy of note. Two guns were being brought across a particularly bad stretch of bog five hundred yards wide. When half-way across, the horses bogged so deeply that they were unable to move, and lay down. One gun sank beyond the axle, and was only prevented from going deeper by the lower shield finding a rest on a more solid piece of ground. Furze was cut and placed under the horses to give them some little footing, then the detachment, with spades, dug out the gun. The horses, assisted by the men on drag ropes, pulled the gun the remaining two hundred and fifty yards in fifteen minutes. Had a tractor been able to penetrate half this distance, it is conceivable that it would have been practically impossible to extricate it from the position where the horses and gun sank.

Horses negotiated with ease a river, four feet six inches deep, and, aided by men with drag ropes, hauled guns up a very steep hill covered with large boulders. Both these feats the tractor was unable to accomplish during the tests in July, 1926.

On the 28th and 29th July, 1926, tests with horses and a Fordson Tractor were carried out in Glen Imaal. The first route chosen was one over which horses had drawn guns several times, but when the representatives of the tractor inspected the route on the 28th July they decided that they would not attempt to traverse that portion of the route which ran through bog. Another route was marked out and consisted of only rough ground, steep gradients and shallow fords. The tractor was unable to follow the horse-drawn guns over this alternative route, and deviated from the actual course in three instances. The driver of the tractor, an expert at his job, would under no circumstances attempt the last part of the route which ran up a very steep hill, fearing that the tractor would topple over or slip back. The route was one and a half miles long, and the horses covered the entire distance thirty-five minutes before the tractor reached the foot of the hill, which it could not climb. The tractor, again, was unable to go through the river, four feet six inches deep, the driver stating that depths greater than one foot nine inches rendered it impassable for this particular machine.

In all fairness to the Fordson Tractor, it must be admitted that on solid ground it is a wonderful machine and, during the tests at Glen Imaal, surprised many by its endurance, speed and power. Indeed the only advantages of this tractor would appear to be its ability to haul guns speedily over sound and flat surfaces, and the elimination of the necessity for training in horsemanship. The latter would be a great advantage to special reserve batteries during their annual training.

The chief disadvantages in this particular type of tractor for gun haulage appear to be:—

- (a) Useless in boggy ground.
- (b) Unable to pass over rocks or boulders reaching above the height of the front axle.
- (c) Water over one foot nine inches in depth presents an impassable barrier to this machine except when fitted with a water-tight engine.
- (d) Steep gradients are negotiated only with very great difficulty.
- (e) The noise of the tractor is so great that it would be impossible to bring field guns into action unobserved.

Many officers who favour the adoption of tractor-drawn Field Artillery do so on grounds of economy, but overlook the fact that such change reduces the manoeuvring capabilities of the Battery. While it may be cheaper to replace gun and wagon teams by tractors, it is questionable whether it would be cheaper to replace horses by mechanical transport for the Battery Commisisoned personnel, the re-



A stiff pull—Knappahowen Hill, Glen of Imaal.

["An t-Oglach" Photo.

connaissance party, battery signallers, field kitchen, water-cart and stores wagons—all very important to the tactical handling of the Battery. It most certainly would not be economical if the new form of battery traction left the Infantry unsupported in any of the circumstances in which the Infantry might find itself in time of war.

The Great War did not prove the superiority of the tractor for drawing light field-guns—its adoption by the different armies being due only to recent manoeuvre experiments. The Continental and American Armies are not dispensing entirely with horse-drawn Artillery, and this suggests that their experiments have not been altogether conclusive.

Quite recently officers of the American Field Artillery expressed their opinion in favour of a proposal to change a group of tractor-drawn field guns into horse-drawn guns. This opinion was based on actual experience. It had, in fact, been recognised by them that in the field the horse had proved the better form of traction. He could give results under all conditions, whereas the tractor, in muddy ground, ran the risk of bogging so deeply as to render any movement impossible for a considerable time.

Naturally the case with us is far stronger. America is a vast, industrialised country, while Ireland is a small agricultural country, but with a horse supply which is unequalled anywhere. Again, Ireland is not self-supporting in such products as oil and petrol, and in the event of complete isolation during war, would soon experience a shortage of fuel for mechanical transport. We would then have to rely on horses to haul the guns. What the horse can accomplish in time of war is well known, but the tractor has little war experience except for hauling the heavier types of guns and howitzers.

Tractors are quite satisfactory on roads, but modern warfare does not confine itself to roads—quite the contrary in fact—so the question arises: Can the tractor accomplish with Field Artillery feats of which the horse is capable? I am of the opinion that it cannot.

Another point in favour of the horse is that if four of the six-horse team were killed, it would still be possible to carry on temporarily with two horses. If the tractor is put out of action the gun is completely held up, and, in the case of retirement, would possibly fall into the hands of the enemy.

“Where the horses can go, the guns can go” is an old gunner’s motto, and it would be most unwise to discard our present system until the tractor has proved that its merits are at least equal to that of the horse for gun-haulage.

The Heavy Artillery, which in a country like Ireland, need seldom quit solid ground, requires tractors for haulage, but let the Field Artillery keep to its horses.

TO CONTRIBUTORS.

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

TEACHT AN AMADÁIN.

AN MAOR B. Ó BRIAIN, Do Scríobh.

Chuir rud éigin moill orm an lá san agus bhí se gairid do'n a dó a chlog sár ar shuidheas síos chun mo lóin a chaitheamh i Restaurant bheag taobh leis an Luxembourg. Bhí an cur-amach deireannach de'n "Midi" in' láimh agam. Thugas strách-fhéachaint air. Bhí moran scéalta ann mar gheall ar bheirt Franncach Cródha a d'imthig tamall beag roimis sin lán de dhóchas agus de mheanmain chun 'An t-Oileain Úr' do bhaint amach 'na "n-Eán Bhán." Na creáitúirí bochta, ní bhfuarthas tásca ná túairisc ortha ó chuadhar thar Chontae an Chláir amach ar an bhFairrge Mhoir. Bhí scéalta, eile ann agus bhí scéal amháin ar na scéalta sin a rug greim ar m'aigne nach rug aon ní eile riamh roimis sin. Chonnacas i leitreacha móra na focail. "Le fou qui vole." ("Ara dichéillidhe An Eitill.") Leath-cholún a bhí ann ag cur síos ar fhear óg, buachaill a bhí ann d'earfá ar an bpeictiúr de a bhí ar an bpáipéar, a bhí tar éis an t-aer a thógaint roinnt bheag neomaintí roimis sin i Nua Eabhrach chun Paris na Frainnce do bhaint amach, chun dul 'na aonar d'aon léim amháin treasna na mílte míle fairrge idir An Sean-domhan so againne agus an domhan iongantach nua san na Meiriceánach.

Bhínn ag cuimhneamh air go minic i rith an thráthnóga san. Cá raibh sé? An n-eireochadh leis? Bhí gach aoine eile ag caint air leis, agus na ceistanna ceádna 'ghá gcur aca ar a céile.

Bhí sluaighte móra ar na Boulevards taobh amú d' oifigí na bpáipéar nuaidheachta an oidhche sin. Thainig scéal go bhfacthas é ag tabhairt aghaidh ar an bhFairrge Mhoir i n-aice le Saint John's, fé mar do thug an t-Ean Bán bocht aghaidh ar an bhFairrge gCéadna os cionn Ceann na Léime, cupla lá roimis sin. An ndéanfadh an Meiriceánach an rud nár eirigh le Plúr na Frainnce do dheánamh. An mbuadhfhadh Lindberg ar an bhFairrge Mhoir?

Thainig an lá, lá aoibhinn samhraidh agus thainig páipéir na maidne leis an lá. Níorbh bhfios d'aoine sa domhan cá raibh an Spirit of St. Louis. B'fheidir an bheirt aca bheith ag eitilt i gcomhnú riamh 'na n-aonar os cionn tonntracha móra garbha na farraige; b'fheidir an bheirt aca an buachaill fionn agus an t-eiteallán beag ar dhath an airgid bheith 'na luighe gan cor asta i dtóin na mara. Dieu sait!

Bhí an meadhon lae arís ann agus cheannuigheas arís an "Midi." Bhí an Midi gan tuairisc ortha. Cheannuigheas an tárna páipéar agus an tríomhadh páipéar agus an cearhrú páipéar. Bhí sé fuar agam. Ní raibh fhios acht ag Dia féin cá rabhadar an uair sin.

Thainig ceád-pháipéar an tráthnóga amach annsan. Cheannuigheas féin é, Cheannuigh gach fear, bean, agus páiste go raibh cúig "sous" aca é, agus fuair gach duine ná raibh an méid sin airgid aige tamall de ó dhuine a bhí tar éis é léigheamh. Bhí fiabhras ag teacht ar mhuintir Pharais, acht chaitheadar foidhne bheith aca. Bhí an páipéar san gan scéal ar an mbeirt freisin.

Bhí an misneach agus an dóchas ag teip ar gach aoine nuair do thainig scéal do thóg an croidhe arís i ngach duine 'sa chathair mhoir scéal go bhfeaca long éigin an t-eiteallán cúpla céad míle slí siar ó chósta na h-Eíreann agus é ag gluaiseacht ar nós na sídh-ghaoithe i dtreo Chiarraí. Annsan thainig páipéar eile amach. Ar a cúig a chlog d'eitill an t-eiteallán thar thalamh na h-Euróipe do'n chéad uair. Bhí scéal ann go ndeachaidh sé thar Chuan Aird Caithne agus Baile na nGall. Is 'mó lá aoibhinn sultmhar a chaitheas ar an mbaile mbeag san i lár Gaeltachta Chiarraí. Ní chloisfeá aon teangan eile ann ó cheann ceann na bliadhna acht an Ghaedhealg acht anois agus arís nuair a thigeadh bád franncach isteach san chuan ag ceannach gliomach. Chloisfeá annsan teanga ceólmhar na Frainnce 'a spreaga ag na mairnéalaigh. Is beag a cheapas agus mé annsan go mbeadh ainm an chuain sin lá i mbéal gach duine

'sa bhFrainnc agus scríbhthe i leitreachaibh móra ar pháipéarabh nuaidheachta an domhain.

Dubhairt lucht na n-eiteallán, na duine a raibh thuigsint aca ins na cúrsaí sin, ná tógfadh an Spirit of St. Louis acht cúig uair an chluig chun dul ó Bhaile na nGall go Paras na Frainnce dá léanfadh sé do bheith ag suibhal mar do bhí go dtí san. "A Dhia!" arsa mise liom féinig nuair a léigheas san "an amhlaigh a bhéidh sé annso ar a deich a chlog duine a bhí chomh fada san uainn ar a cúig." Acht s'é an rud a dubhairt na paiper go léir, gur docha go sroisfeadh sé Paras timpal a deich.

Chuadhas abhaile agus d'itheas mo dinnéar. Do thógas mo hata agus mo chóta annsan agus thugas aghaidh ar Le Bourget an t-aerodróm mór taobh amú de Pharas mar a dtagann i dtír na h-eitealláin go léir ó thíorthaibh iasachta. Chuadhas chomh fada leis an Porte de la Villette, an geata de'n chathair is giorra do Le Bourget 'sa traen-fé-thalamh. Do réir mar a bhí an traen ag druidiúint chun an gheata san bhí sé ag líonadh suas go dtí go raibh sé chomh lán san sa deire nár bhfeidir duine eile do chur isteach ann. Thánag aníos arís taobh leis an nGeata. Agus cad é mar radharc do chonnach annsan! Bhí plás mór ann agus é lán de gach aon tsaghas gléas iompair. Bhí mótoir, agus busanna agus trámanna agus rothair agus trucail de gach sórt da bhfeacthas riamh ann agus iad go leir ad iarraidh dul amach as an gcathair go dtí an t-aerodróm. Shamhlúig sé dhomh sa go raibh an Domhan agus a Mhac a d'iarraidh dul ann.

Scoláire bocht ab'eadh mise an lá san. D'éirigh liom tar éis i bhfad plás d'fháil i dtrám a bhí ag dul amach. B'in é a shabháil me. Taobh amú de'n chathair, tá bothar mór díreach dtá níos leithne fé dhó ná aon bhóthar dá bhfuil againn i mBaile Atha Cliath ag dul amach ó thuaidh thar Le Bourget. "La Route de Flandres" a tugtar air. Do ghaibh na Gearmáinigh an tsli sin i 1914 agus iad ag déanamh ar chroidhe 'na Frainnce roim Chath na Marne. Bhí oireadh san motair agus rudaí eile ar an mbothar an oidhche seo gurbh ar eigin ab fhéidir leo gluaiseacht i n-aon chor. Ar adhmháirí an domhain do bhí slí fé leith ann i gcóir na dtamanna a bhí níos aoirde ná an bóthar ar nós an bhóthair iarainn Poll an Phúca. Dhá deascaibh san do ghluaiseamar ní ba thapúla ná na daoine a bhí an an mbóthar féin, acht má ghluais do thógamar uair a chluig chun na trí míle slí atá idir geata na Cathrach agus an t-aerodróm do chur dinn.

Bhí se tamall maith tar éis a deich nuair do shroiseamar an baile beag ar a dtugtar le Bourget. Bhí an oidhche ag tuitim. Bhí na mótair agus gach rud eile chomh mór san tre na chéile um a dtaca san go rabhadar 'na lán-stad. Do ritheas ó'n mbaile go dtí an t-aerodróm le h-eagla go mbéinn déanach. Nuair do bhíos cúpla céad slat ó gheata on aerodróm chuala os mo chionn, cronán eitealláin. Bhí se go h-ana-lag mar gheall ar ghleó na mótor agus béiceach na dtiománuithe a bhí ad iarraidh dul ar aghaidh. D'fhéachas suas. Bhí sé cheana 'na h-oidhche. Ní fheachas faic.

Shroiseas geata an aerodróm fé dheire thair tháll. Bhí an sluagh tar éis briseadh isteach in-aimdeóin an ghárda saighdiúirí bhí ann. Bhí gach aoine ag rith. Chonnach páirc mhór os mo chomhair amach agus na céadta soillse ag taitheamh uirthé i dtreo is go raibh sé 'na lá ar an bpaire agus suas go dtí cúig troighthe deag nó tuairim leis ós a chionn. Ós a chionn sin arís bhí se na h-oidhche chomh dubh leis an bhfiach. Tháinig mar a bhéadh éan mór anuas an as oidhche agus mé ag rith i dtreo na páirce. Dath airgid no dath bán a bhí air cheapfa agus na soillse ag taitheamh air. Ritheas féin agus rith gach aoine eile ní ba dheine fós annsan. Níor labhair duine. Ní dheanfad dearmad ar an neómant sin go deó deó. Do tháinig an t-ean mór anuas ar an dtalamh agus dó stad. Bhí dha céad míle daoine asta. Do liúgh an sluagh arís agus arís agus arís eile. Ritheas ar mo dhichill i dtreo an eitealláin. Bhí ard-oifigeach airm i n-aice liom agus mé ag rith. Chuir bean ceist air. Chualas an freagra. "S'é atá ann go cinnte," ar seisean. Leanas do bheilt ag rith. Bhí saighdiúirí timpal ar an eiteallán anois agus bhí sé 'a thárrach

aca i dtreo tighe a bhí ann ? Bhí sé i bhfad uaim acht chonnach an treó 'na rabhadar ag dul. Chuireas mé fein ar an t-slí rompa. Chuaidh an sluagh tharm mar do bhéad tonn. Bhí an t-éan iongantach ar dhath an airgid taobh liom i gcionn neómaine eile. Bhí gach aoinne à chimilt agus à mhóla fé mar do molfaí rud beó. Chonnach na focail "Spirit of St. Louis" ar inneal an eitealláin agus é ag teacht im threo. Bhí fainne na saighdiúirí briste cheana. Dó chromas síos agus nuair do dhírigheas mé féin bhíos taobh leis an mbothán 'na raibh Lindberg tar éis eitilte ó Nua Eabhrach go Paras na Fraince. Chuireas mo lámh air. "Mo ghraidn thu," arsa mise. Níor fhéadas a thuille do rádh.

Sin mar do thainig thar an bhFairrge Mhoir an t-Amadán is mó clú da bhfeaca an Domhan riamh.

TABLE SHOWING RESULTS OF CHIEF GUERRILLA WARS, 1792 TO 1926.

(From *Army Quarterly*)

Date.	Principal guerilla leader.	Theatre	Great Power	Guerilla nationality.	Approx. duration.	Result.	Causes of result.
1792	Charette	La Vendée, Brittany	French Republic	French Royalists	4 years	Victory of Great Power	Enclosure of affected area ; progressive envelopment of whole country by strong posts and patrols, diplomatic measures.
1809	Hofer	Tyrol	France and Bavaria	Tyrolese	1 year	Victory of Great Power	Superiority of force, limited possibilities of escape for guerillas, i.e. nature of country.
1810	Bolivar	Venezuela	Spain	Venezuelans	9 years	Victory of Guerillas	Eventual exhaustion of Great Power. Extraneous support for guerillas in men and money.
1811	Juan Martin	Spain	France	Spaniards	2 years	Indecisive	Guerillas at first successful ; later merged into Spanish Army and less effective.
1830	Abd-el-Kader	Algeria	France	Arabs	15 years	Victory of Great Power	Employment of strong mobile columns.
1830	Schamyl	Caucasus	Russia	Circassians	29 years	Victory of Great Power	Superiority of force, guerillas finally employed artillery and offered objectives to attack.
1848	Garibaldi	Italy	France and Austria	Italians	12 years	Victory of Guerillas	Weak effort by Great Powers.
1895	Several	Cuba	Spain	Cubans	2 years	Victory of Guerillas	Weak effort by Great Power, threat of American intervention, lack of initiative of troops of Great Power.
1900	de Wet	South Africa	British Empire	Boer	2 years	Victory of Great Power	Superiority of force, use of block-house system, "drives," mobile columns, collection of cattle and supplies.
1919	Collins	Ireland	Great Britain	Celtic Irish	2 years	Indecisive	Lack of troops ; lack of military powers.

MODERN PROBLEMS OF GUERILLA WARFARE.

By MAJOR B. C. DENING, M.C., R.E.

(By kind permission of *The Army Quarterly*.)

AT the present time the prospects of great wars are somewhat remote. The British Empire, however, which controls the destinies of many incorporated nationalities, must at all times be prepared for outbreaks of violence of the type known as guerilla warfare, and a study of the problems of this form of warfare as they stand to-day is not without interest.

Before proceeding to the particular difficulties to which guerilla warfare gives birth, it is desirable to draw the distinction which exists between this and other methods of fighting. Guerilla warfare is not easy to define. It has been variously described as "partisan" warfare, "rebellion" and "small war," but these terms are confusing. A guerilla war is only truly such when the guerillas, or men of the lesser adversary, are never permanently formed into organized bodies, but who concentrate for particular operations and disperse equally rapidly on the completion of those operations. This is certainly the chief characteristic of guerilla warfare. The question of whether or not the guerillas wear a recognized uniform is not decisive in establishing the nature of the warfare. Generally speaking, it may be assumed that uniform will not be worn by guerillas, at any rate when not pursuing active operations, for otherwise their detection and annihilation would be inevitable.

There is undoubtedly a tendency to confuse guerilla wars with "small wars." It may be taken as an axiom that as soon as guerillas form into permanently organized bodies, the war becomes a "small war," and that until they do so, it does not. Thus, the Boer War started as a "small war" and ended as a guerilla war, whereas the recent French campaigns in Morocco and Syria have been more in the nature of "small" than guerilla wars even if the organization of the native-formed bodies has been a somewhat loose one. On the other hand, the fighting in Ireland in 1919-1921 bore all the marks of guerilla warfare pure and simple.

In studying the guerilla wars of the past, it is remarkable how little the characteristics of this type of fighting have altered with the passage of time. Thus the cause of such warfare has inevitably been an actual or imaginary suppression of the national aspirations of a smaller race by the force of a larger one. Such wars have always been carried out with the utmost ferocity on both sides. Tactics have varied only in detail from century to century. Mobility, good intelligence, surprise and cunning, and the nature of the country have continued to play their part time after time. What is more—far more so than has been possible in the case of greater wars—with the facts of history available, it has been feasible nearly always to forecast the inevitable result of guerilla wars. This latter fact being so, it is remarkable how often one side has embarked on the struggle, knowing well what its end was likely to be. While discussing this aspect of the question, it is interesting to go back over the principal guerilla wars of comparatively modern history and to note the results of these struggles and how such results were obtained.

The ten principal guerilla wars which have taken place since 1792 are summarized in the table at the end of this article. In five of them, the victory rested with the Great Power, though in two of them only after a most protracted struggle. In two cases the result was indecisive, and in the remaining three the guerilla forces were victorious. If the causes which led to these results are examined, it is abundantly clear that where the Great Power had the means and the will to exert itself,

where it employed the right tactics, unless outside intervention entered as a factor, it invariably won, and that only where the reverse was the case could the guerillas hope to win.

Where outside factors, such as the remoteness, or other entanglements, of the Great Power have come in to balance the scales, at least temporarily, in a guerilla struggle, the decision has rested to some extent upon the tactics employed by the combatants.

For the Great Power, it has been sound tactics in all cases to employ strong mobile columns. In confined territories these have worked in conjunction with fixed lines intended progressively to envelope the disaffected areas. These methods were employed by Hoche in La Vendée in 1796, and by Kitchener in South Africa in 1901-1902. In more extensive or very inaccessible territories, such as Algiers and the Caucasus, successive envelopment of the whole country has been impracticable, and results have taken longer to achieve. In such cases it has been necessary to wait for the guerillas to provide an objective and then to strike with the nearest mobile column.

For the guerillas, the right tactics have consisted in concentrating for the attack of suitable objectives and dispersing immediately afterwards in order not to give the regular forces an objective. Where guerillas have so often failed is in not adhering to this primary principle. Success in minor actions has led them to believe themselves capable of fighting large battles, and attempts to do so have usually proved disastrous to themselves. This was the case in Spain in 1811. Again in the Caucasus, the Circassians, in the latter part of their long struggle, made the fatal mistake of acquiring artillery and attempting to fight as permanently formed bodies.

It is now for consideration whether the problems of guerilla warfare have changed, and, if so, whether the principles which have been applied to their solution in the long past still hold good to-day.

It is certain that the conditions in which guerilla warfare is likely to be fought to-day have altered. To begin with, with modern methods of communication and publicity, combined with the progress which has been recorded in the civilization of most of the Great Powers, it is inconceivable that the forces of the Great Power will be able to display that ferocity in their conduct of the struggle, whatever the guerillas may do, which has been such a potent ally in the past in the task of putting down an insurrection. The methods of the Great Power will of necessity, if not by inclination, have to be cleaner and more above board than was the case in bygone years. Otherwise such an outcry would arise as would be certain to bring about either the fall of the Government responsible or the intervention of an interested outside Power. This change is definitely a loss to Great Powers and a gain to the fomenters of guerilla troubles, for by barbarous acts guerillas can possibly compel the forces of the Great Power into reprisals and thereby weaken the case of the Great Power. Guerillas have in fact, to-day, a new weapon, political propaganda, which draws blood upon the home front of the Great Power.

Further, methods by the guerillas of conducting warfare have advanced. In former days, the object of the guerilla was to incapacitate, permanently, as many of the soldiers of the Great Power as was possible, hoping that the accumulation of pin-pricks would cause the Great Power to give way. To-day the policy of pin-pricks continues, but the nature of the prick has changed. Guerillas aim, where possible (and to-day every Great Power, except perhaps the U.S.A., is sensitive where expenditure is concerned), at draining the financial rather than the military resources of the Great Power. This method may be said to have been started with the Cuban insurrection of 1895, where the guerillas, realizing that Spain was very greatly dependent upon the revenue obtained from their island, concentrated their strategy and tactics upon the destruction of the chief crop of the island, the sugar crop. In this objective the guerillas were successful, and it is on record that Spain

had given way to them before the threat of American intervention became real. This same object underlay the majority of de Wet's exploits in South Africa, where the burning of trains, bridges and supplies was a feature of the later guerilla operations. In Ireland in 1921 the Republicans were pursuing the same ends, and instructions to that effect were issued to their forces and were being carried out up to the time of the truce, as the burning of the Customs House, the main Army M.T. workshops and other Government property in Dublin at the time testify. This new line of attack may well again be a source of weakness to Great Powers, where vulnerable and valuable property is readily accessible to the civil population, for it is impossible to abandon such property and face the losses that may be entailed, and at the same time their protection ties up in guards incalculable numbers of troops or police.

In addition, the invention of bombs, automatic pistols and high explosive mines as effective weapons of attack has increased the difficulties of stopping guerilla warfare, particularly in large centres of population. These weapons are readily concealed on the person in a crowd or in endless hiding places in a city. They lend themselves to the first principle of guerilla fighting, the rapid concentration of armed force for an operation, combined with its equally rapid dispersion upon the completion of the task.

Against these advantages which guerillas now have, Great Powers have also certain advantages compared to former days. The advent of mechanical transport has added greatly to the mobility of troops in most countries, though in Ireland it has shown what could be done to reduce this mobility by systematic road cutting and destruction. The invention of wireless enables news to travel very quickly, and in future will greatly facilitate the rapid concentric advance of scattered columns when an objective has been located. The increased fire-power of small arms also enables small detachments to be more effective than was formerly the case.

On the whole, however, it must be admitted that by modern developments, guerilla forces have gained more than the forces of Great Powers. This being so, it behoves Great Powers to have a clear doctrine as to the action required if and when a guerilla trouble breaks out.

Obviously the first and most effective remedy to be sought by the Great Power is the removal of the main causes of grievance upon which the insurrection relies for sustenance. Unfortunately, however, it is not always possible for the Great Power to meet the desires of the local movement without in some way imperilling the existence of the Great Power. In such a case, the sooner the Great Power explains its position quite clearly and firmly defines the policy, to which it must adhere, the better for all concerned. A vacillating and weak policy is responsible for much of the trouble experienced by Great Powers in their dependencies.

When it is once decided that only force will meet the case, a definite military programme is essential. To begin with, the legal status of the Army employed requires to be defined. A form of semi-military, semi-civil control, as prevailed in Southern Ireland in 1920-1921, is quite hopeless so far as a solution of the military problem is concerned. Initially, the position of the military is that of a reserve to be used in aid to civil power. As soon as disturbances increase, however, it is essential that as early as possible the problem of the Army be simplified by the declaration of martial law. Until then the G.O.C. is hampered beyond belief and unable to undertake systematic operations.

The second step is to decide on the course of military action suitable to the theatre in which the outbreak is taking place. The disaffection may occur in one of four definite types of country:—(a) in a limited country, *i.e.*, a country bounded by impassable features such as the sea or high mountains, and more or less generally traversable, such as Ireland or Cuba; (b) in a country of vast extent, which is more or less traversable, such as North Africa or South Africa; (c) in a country

which is not generally traversable, such as the Tyrol or Malabar; or (d) in a thickly populated country with large cities, such as Dublin or Cairo.

Whatever the type of country, it is certain that a sound policy will be to assume the offensive at every opportunity and to employ numerous sufficiently strong and extremely mobile columns, controlled by wireless, and equipped with mechanical transport. In this connection, it is well to note the necessity for appreciating at an early stage the magnitude of the task and for supplying the necessary forces. The historical examples give proof that where there has been a neglect to supply a superiority of force, failure by the Great Power has followed inevitably.

In addition to the adoption of all means for increasing the mobility of the regular forces, measures should be taken to reduce that of the guerillas. In South Africa it has been stated that the resistance of the Boers might have been greatly shortened by the seizure of all horses. In Ireland a restriction was placed upon the movement of all motor vehicles, and an extension of these restrictions to bicycles would certainly have affected the mobility of the republicans.

Intelligence is, if possible, more important in this class of warfare than in any other. It is usually faced with great difficulties in that the population is often bitterly hostile and terrorized into the bargain. Military forces are, to begin with, largely dependent upon police intelligence, but this source of information should invariably be supplemented by the institution of a military Intelligence service.

Taking in turn the four kinds of a country in which operations may be necessary, it is clear that in (a), a limited country, the work of Hoche in Brittany, and to some extent that of Kitchener in the Orange Free State, point to the desirability of a system of successive envelopment of the country. This procedure entails the use of a large number of men, with possibly miles of wire entanglements and block-houses, but, where feasible, this is probably the cheapest policy in the end. Successive belts, as combed out, require close policing. A system, under police supervision, of registering and providing with identity cards all able-bodied males left behind the advancing line, greatly facilitate subsequent control. All males of questionable character would be of course detained and interned. In (b), a country of vast extent, the above procedure may be practicable over limited and important portions, which have first to be enclosed by natural or artificial obstacles. Generally, however, only by means of a prolonged campaign, conducted by mobile columns of great efficiency against any objectives that offer, will guerilla warfare in such a theatre be brought to an end. A fair example of this is the history of the French campaign against Abd-el-Kader between 1830-1845. In (c), a country not generally traversable, the difficulties of the Great Power are less in that, although the guerillas have many impenetrable hiding places into which to disperse, the guerillas themselves are forced on to the limited communications in order to operate and to live and are in consequence more easily encountered. The short work which the French and Bavarians made of the Tyrolese in their restricted territory in 1809 is a classic example of the action possible in this type of country.

A thickly populated city offers to soldiers perhaps the most difficult problem of all. Here the guerillas have opportunities to make propaganda, to destroy property and to deliver attacks with great ease. The task of the Army becomes essentially a police task. It consists mainly of picking out from the thousands the few really dangerous opponents. The problem more than ever becomes one of good Intelligence. The troops must avoid fights in the streets wherever possible, for such entail damage mainly to harmless civilians. Military action is principally required in the direction of raids upon suspected localities. Raids upon the proper places will lead to captures which will point the way to further points to be raided. Such raids, however, to be successful, require, as the history of events in Ireland show, to be planned with great skill and carried out by highly trained bodies of men.

Throughout the operations, in any type of country, it has constantly to be borne in mind that the eventual object of the employment of force is to bring about a

peaceful and happy condition of affairs in the country concerned. Consequently, military measures in particular require to be most carefully thought out, in order not only to be effective, but also not to leave behind upon the inhabitants impressions which cannot be readily eradicated. Hoche, who, of all the successful leaders of Government troops employed in the past upon the suppression of guerilla fighting, was probably the most successful, throughout his operations based his orders upon the necessity of pacifying as well as of subduing the people of Brittany.

In conclusion, it is safe to say that the principles upon which guerilla warfare should be conducted, whether by the one side or the other, are the same to-day as ever. The problems to which this form of fighting now gives rise are, however, different, and up-to-date methods for dealing with them are necessary. From the point of view of a Great Power, military attention requires to be concentrated upon the necessity for:—

(i) the early provision of adequate forces; (ii) the early declaration of martial law; (iii) the organization of Intelligence; (iv) the employment of methods suitable to the theatre; and (v) the eventual pacification of the country.

GUERRILLA WARFARE IN IRELAND.

The following article on Guerilla Warfare, which appeared in "An tOglach" in the issue of January, 1920, will be of interest in view of the extract from the *Army Quarterly*:—

It has already been pointed out that the position of the Irish Volunteers has now come to resemble a native army waging guerilla warfare against a foreign army of occupation. It is the duty of Volunteers to take this fact seriously to heart, and to recognise in all their plans, in their methods of training and study, and in their general outlook, the existence of this state of guerilla warfare and all that it implies. It is our business to develop those guerilla tactics which we have found most serviceable in dealing with actual conditions in Ireland at present, and to bring them to the higher pitch of perfection of which they are capable. It is our business to wage war against the forces of the invaders whenever and however we find it can be done most effectively. Circumstances have largely determined the training and tactics of the Irish Volunteers, and we have developed methods of working admirably suited to our present position. When the Volunteer force was established in 1913 it suffered severely from the incubus of the British Army-trained drill sergeant, with his barrack square ideas; but subsequent to the outbreak of the great European War this evil began to disappear. The Volunteers began to develop a system of training of their own, based on a recognition of the actual facts in Ireland, and the kind of warfare they would have to wage when the time came for taking the field. The value of these methods of training was demonstrated triumphantly in Easter Week, 1916. The close of that brief but glorious campaign brought about certain changes in the position of the Irish Volunteers. They had to encounter obstacles in their work which had not previously existed, and they had to devise new means of meeting these difficulties. The result has been striking. The Army of the Irish Republic is now more numerous, better organised, armed and equipped than ever before; and the men throughout the country have answered splendidly to the calls made upon their courage and endurance. The most daring and difficult feats have been carried out triumphantly by them, and the words "Irish Volunteers" have come to be regarded by the people of Ireland as a symbol of efficiency.

It is an axiom of warfare that one must reserve one's strength in order to strike when and where one is able to do so most effectively. A force greatly inferior to the enemy in numbers, armament, and equipment may strike very heavy blows against their enemy and ultimately render his position in the country untenable by the adoption of guerilla tactics.

Prior to the last great European War, for practically a hundred years (excluding the "muddling through" of the Crimean War) English soldiers were never called upon to face any enemies save such as were greatly inferior to them in organisation, armament, equipment and resources. Consequently, a great deal of British military studies was concerned with the tactics and strategy of what they termed "small wars." Books were written to instruct British officers in the art of crushing ill-armed troops, devoid of the equipment and resources of modern armies. Of all the forms of "small wars," that most dreaded by Imperialist armies of conquest is a prolonged guerilla warfare in which they are unable to obtain a moment's security nor gain any opportunity of effectively crushing their ubiquitous foe. Particularly do they dread the adoption of well-organised guerilla tactics by a civilised foe of keen intelligence and courage. Surprises, ambushes, raids on their fortified positions, sniping at their stragglers, captures of their arms and equipment, interruption of their communications, interference with their intelligence, are to be apprehended by them daily; and their forces are driven more and more into the position of invested garrisons in the midst of a hostile country, afraid to venture from their strongholds except in force, living in a state of perpetual apprehension. That such a state of affairs exists to a great extent in Ireland at present is obvious to all; and it is the business of the Irish Volunteers to see that it continues, grows more intense and more menacing to the invader.

The histories of former fights for freedom in other lands when guerilla tactics were resorted to are full of lessons for the Irish Volunteers. The Tyrolese peasants, by guerilla warfare, were able to baffle and even to inflict crushing defeats on the best troops of the great Napoleon. A British War Office publication points out that "resolute, well-armed patriots" are most formidable in guerilla warfare, and particularly in the work of raids and surprises. In some respects the methods resorted to in Ireland are something similar to those employed by the Cuban insurgents with such success for years against Spanish forces numerically far stronger and much better armed and equipped. But it may be remarked that no other body of troops who waged guerilla warfare against an invader had anything like the organisation of the Irish Volunteers. To aid in keeping all the services of this organisation at the highest state of efficiency is the business of every member of the Republican Army. There is one branch of service in which we possess a great superiority over the enemy—intelligence. It is a department in which guerilla troops, operating in their own country, amid a friendly population, against a foreign invader, will always have an immense advantage. It is a vital service, and one on which our strength largely depends. No effort should be spared to make this department of our work as efficient as possible. Every individual volunteer should co-operate in this work, both during his hours of active service and his hours of leisure. No information bearing on the strength, resources, machinery and intentions of the enemy should be neglected. Full information should be collected as to his forces and machinery in each locality, so that any offensive move on his part can be effectively countered and the machinery by which he operates against us can be injured in its most vital parts. Recent occurrences have shown that Volunteers throughout the country are alive to their duties in this and other respects. A number of daring and successful achievements stand to their credit. That number will probably be largely added to in the near future."

An Incident of the Anglo-Irish War.

BY

CAPTAIN E. O'BAOIGHILL.

ROSSAN Point, a wild bleak headland on the north-west coast of Tirchonail rises 400 feet above sea-level. It commands an unbroken view from Arranmore Island to Erris Head, Sligo Channel being thus exposed in its full extent.

In pre-war days there was a Coastguard Station (manned by a Chief Boatman and four Coastguards) at Malinmore, where the headland slopes down to sea-level. Ten miles further south along the circling bay stood Teelin with a similar Station. On the outbreak of the World War the garrison of Malinmore was increased by eight—all expert naval signalers,—and a Signal Station was built on Rossan Point. This latter station was equipped with a flag staff 84 feet high, and a signal-mast forty feet in height provided with three high arms. Malinmore and Rossan now received the official designation 'Glen Bay.' The Signal Station was constantly occupied by four men detailed from Malinmore—three quarters of a mile distant. Needless to say, when the Volunteer Organization established itself in the district, the official Glen Bay was an object of unobtrusive interest to the local Volunteers, and every movement of its daily life was thoroughly known.

All through the World War the British Admiralty was adding to, altering, and improving the Signal Station. The surroundings of the latter were harmless-looking enough until the Winter of 1919 when a wall of earth five feet in height and a barbed-wire fence external to this were erected on its three open sides—(the fourth side being a sea-cliff 400 feet in depth)—and entrance to the Station under any pretext whatsoever was rigidly forbidden 'civilians.' The Volunteer Brigade decided to enter in a military capacity, and an attack with the co-operation of a Flying Column was arranged for the 27th June, 1920, the object being to secure arms and ammunition and destroy the post. The moral effect of failure would be disastrous; success must be assured. Hence the Flying Column. We could only await the 27th June.

It is unnecessary to point out that the system of Intelligence of the I.R.A. was as near perfection as it was possible to bring it. On the night of the 8th June, there came a knock to my door at 11.40 p.m. (I held a position of responsibility in the local Battalion)—and a member of the local Company was admitted. He announced that he had just learned that a boat was to land at Teelin on the following day with Marine reinforcements and additional warlike stores for the garrisons of Teelin and Glen Bay. I did not question the accuracy of his information; it came from an impeccable source. The details suggested reinforcements on such a scale that it looked as if a successful attack on the 27th June could not materialize. I might add that Destroyer D.F. 60 had been hovering round for some days. Evidently British Intelligence was functioning well.

An emergency does not permit of delay in arriving at a decision. We at once summoned the other Volunteers in the immediate neighbourhood—two in number (the nearest of the remainder being three miles away) and a plan of action was arranged.

It was a rather dark night and a high wind was blowing—when we set out armed with a shot-gun and a revolver of ancient pattern. A third Volunteer armed himself with a bundle of hay from a rick which we deliberately met on the way. Hay on a windy night could do harm to a wooden structure even if we failed to force an entrance. Petrol was a relatively rare commodity in that rural district—but petroleum takes the place of gas and electricity for domestic purposes. The hay-bearer expressed anxiety about the absence of paraffin, but was reassured by the reply that the British Government would provide the paraffin. Because of the weirdness and suppressed excitement of the moment I may be forgiven if I mention that the

burden of hay on his back and his request for inflammable liquid involuntarily called up a vision of Abraham and Isaac. Within a quarter of a mile of our objective we were close to a pathway that ran between Rossan and Malinmore Station and heavy footsteps coming from above compelled us to lie flat in the short heather. We recognised the man—one of the four who was on night-watch in the Signal Station and was presumably going down to report to the Coast-guard Station that all was well above, and to spend some time with his colleague below. That simplified matters. We pushed on. The barbed-wire gate presented no difficulty. The garrison was apparently not expecting visitors. One Volunteer was now sent down the path in the wake of the watchman, to give warning of his premature emergence, or of any unusual activity in the lower Station. The gate in the bank of earth was more difficult to negotiate, being secured by top and bottom bolts. The second Volunteer was stationed at that gate with the shot-gun to cover the retreat of the other two in case of emergency.

When we two advanced inside the gate we were surprised to discover that the path was very circuitous and that the remainder of the enclosure was covered with little trenches and sod fences and wires hung with tins, etc., so arranged as to announce the arrival of a tunnelling party. The moaning of the wind in the cliffs, and the whistling of the wires, stays and halyards of the poles drowned any noise we made.

The door was closed, the windows closely shuttered; the interior showed no signs of life save light from an unshuttered window looking seaward. Even a terrific blow on the door with a claw-hammer, and a summons to surrender in the name of the Republic evoked no response. A repetition of the order with the additional information that the place was surrounded, was rewarded with a crash inside. The Coast-guard who fell over a bucket at that time of night and did not speak back is certainly a *rara avis*. He withdrew the bolts, opened the door, and peered out—"Surrender! the place is surrounded by 80 men!" "All right. Are you Sinn Fyners? We have no illwill towards Sinn Fyners" and I think he may have perhaps unwittingly summarized the attitude of the Royal Navy to events in Ireland during 1919-21.—He certainly relieved my mind.

The garrison of three got their jumpers and caps, and were ordered to march out to the sentry at the gate and remain with him as our men were hidden everywhere in the heather. Then in a louder voice—"Sentry at the gate, take charge of three prisoners who are being sent out!" My remaining colleague accompanied them part of the way, and saw our friend of the shot-gun take them in charge. On his return we found a two-gallon jar of paraffin as per promise. Rifles, revolvers and ammunition—a goodly store—were carried out; the remaining stores were inspected. Hay, paraffin, and inflammable stores were placed in position. The prisoners were then released and ordered to proceed to the lower station by the path. They were provided with an extemporised password in case they met any of our imaginary men en route. Then the fire did its work. My last look from close quarters showed the old regulation clock on the wall sticking to its post and proclaiming 1.20 a.m. to the glare. We withdrew with the arms and ammunition to the accompaniment of occasional little fusillades from the burning building, apparently ammunition which we had failed to find, and our withdrawal calls for no notice beyond the fact that we began the return journey by turning our backs on home, and cut the telegraph wires four miles away on our circuitous route.

I relate the episode—not that there is any military lesson to be learned from it—unless, perhaps, it shows that a little bluff in support of an emergency decision is sometimes attended with success. It is a pleasure to look back on this bloodless operation of the Anglo-Irish War, for of all the representatives of foreign rule in Ireland the old Coast-guard was the one most in sympathy with those among whom he lived. His duty was frequently humanitarian, and the spirit of camaraderie was strong between him and the fisher-folk with whom he sometimes shared danger—as he was always ready to share the petty luxuries and comforts that came his way.

COCK-FIGHTING.

THE majority of the public derive their impression of cock-fighting from Press reports in which this alleged pastime is portrayed as a fugitive from justice, and is by suggestion painted as a degrading, debased and brutalizing practice of the rabble. In case the fact that I have attended such functions may not of itself suffice to clear the devotees of the sport from the stigma of this appellation I refer to one occasion on which the unwelcome attentions of the Constabulary were so persistent that my Lord—wearied of being harried from one Police District to another changed the venue to his drawingroom. This latter, well provided with windows on three sides, formed when cleared of furniture, an excellent arena, whilst the spectators were amply accommodated with an uninterrupted ringside view from the terrace. The sport is not by any means a plebeian monopoly.

As regards "cruelty"—the contests are arranged with meticulous care according to a very strict, well-recognised procedure—with ring, seconds for the birds, due regard for weights, etc. The rounds are like the round of the old bare-knuckle prize-fights—being determined by a knock-down or a clinch rather than by the clock. If a bird refuses to leave its corner the fight is awarded to its opponent; there is no question of unwilling birds being forced to fight, any more than there is of a dissenting dog being compelled to draw a badger. Nor are the artificial spurs by any means very lethal weapons; the wiles of defence are too well known and practised by the participants. Nature after all is red in tooth and claw, and at certain times in the leafy lanes we see two cock-robins engaged in a life and death struggle. Cock-fighting merely affords an opportunity of testing what is best in gallinaceous blood—on the same lines as Nature carries out her own selection tests.

There is no basis of truth in the couplet:—

The game-cock clip'd and armed for fight

Does the rising sun affright,

beyond the fact that such contests usually take place at dawn and that birds are prepared as described.

Like badger-baiting and other sports that sound cruel, it discovers what is best in the species by availing of its natural instinct. Certainly the cruelty is not comparable to that of the annual slaughter, under legal auspices, of thousands of half-domesticated pheasants, or the "playing" of a salmon for hours with a hook in his jaw, until the time is ripe for the lingering *coup-de-grâce* of the gaff. Of course a person who believes in the transmigration of souls could not be expected to become a patron of cock-fighting.

In pre-war days the period coinciding with Summer Assizes and the 12th July celebrations in Ulster made unusual demand on the time and personnel of the police, and this was the cock-fighters' holiday. Many citizens, unmindful of the pomp and majesty of the law holding sessions in the assize towns, and of the glories of the Boyne that were being drummed elsewhere, sought to indulge their pastime in remote places on mountain or island. But they were not always undisturbed. The ubiquitous R.I.C. men often came to spoil sport—but were usually content to see the lawbreakers clear the borders of their police district. Sometimes the retreat into a neighbouring district brought them up against another posse who hung on their flanks till that district was cleared, etc. On one occasion a series of fights staged for the Limerick-Cork border was so unfortunate in this respect that the engagements were finally decided at Holyhead.

During the British occupation the attention paid to cock-fighting was based not so much on consideration for animals as on desire to prevent assemblies at times and places where the other possible activities of the crowd would not be subject to police observation. Indeed after one of the last cock-fights (during

the World War) at which the police intervened—members attending were summoned under the "Whiteboy Act" for "arising by night, &c.," but ultimately a *nolle prosequi* was entered.

I accompanied an old doctor to the venue in this case, a well-known meeting place in a Leinster county. As we turned in the gate from the main road in the grey summer dawn, my companion was saluted by the local R.I.C. Sergeant who peered into our faces with the remark: "I am sorry to see you here, sir," followed by the retort courteous: "Not as sorry as I am to see you." Respect for British law in the country was then at a very low ebb—but the Sergeant was apparently a courageous man and imbued with a high sense of duty, for the next thing we saw was the said Sergeant with a constable enter the sacred ring just as the birds were ready, and harangue the crowd on the enormity of their offence in violating the law as embodied in Vic. x. y. Cap. z. Lo! the voice of Ulster and the head of a Belfastman thrust between the Sergeant's knees—and his harangue was cut short with instructions to Jamie to begin the avian hostilities.

One reasonable ground for legal objection to cock-fighting is the unfettered gambling associated with it—not only on the issues of contests, but on all and sundry objects potentially capable of being gambled on. I have heard of one fight between Ulster and the South—staged near the home-town of a champion southern bird, after which a local bank, as the result of that fight being lost, paid out £80,000. If repression cannot eradicate, legalisation might control this abuse and bring the gamblers into line with ordinary punters.

To prevent the venue being divulged, the announcement was usually promulgated only a short time in advance, the select few who received the news passed it discreetly on, and it frequently happened that people had to travel all night with the minimum of notice. The whole sport was certainly a battle of wits with the powers that were, and should have afforded an excellent training for guerilla scouts and guides.

I have had occasion to mention Ulster, which looms large in the history of the sport in Ireland. As of many things it can be said of cock-fighting that it bridges partition both for the cockfighter and the authorities. It is not unusual now to see by the Press that the devoted band is banded about between *Gárda Síothchána* and R.U.C., from frying pan to fire, and back again. Legalisation of the practice might lead to a closer association and understanding between Ireland and her *irredenta*, and again, legalisation might deprive the sport of its greatest charm—*nititur in vetitum*.

ESKORODISMENOS.

THE SHANNON SCHEME.

ITS ORIGIN AND CONSTRUCTION AND SOME POINTS REGARDING ITS MILITARY ASPECT.

By J. J. COMERFORD, B.Sc., M.Sc., A.M.I.C.E.I., Comdt., A.C.E.

IN Ireland, a country which has, owing to its location, latitude, and various other climatic conditions, more than its just share of rainfall, and as a direct consequence, of rivers, it is only natural that the development of the water-power resources of the country should be one of the principal problems that a home government would be expected to deal with. Up to the year 1920, though several private investigations had been conducted by individuals, nothing of an official nature had resulted. The first Dáil, in 1919-20, appointed a Commission to enquire into the resources of the country, and among the points dealt with was water-power. According to the findings of this Commission, there was available 169,040 effective h.p., which could be developed from the rivers and lakes throughout the country, and that of this 45,000 effective h.p. were available from the Shannon. These figures, however, dealt with the minimum flow of the rivers, and were taken from observations supplied by Mr. J. Chaloner Smith, of the Office of Public Works, which observations extended over a period of 25 years. The figures do not take into account the provision of storage capacity, nor any schemes of great magnitude to increase this storage and provide artificial high-level canals for power purposes. A Report published by the Board of Trade in 1921 gave the total maximum available horse-power which could be developed from the rivers of the country as 500,000, the monetary value of this asset being estimated at £10,000,000 per annum. This report recommended a Shannon Development of 65,000 h.p. at an approximate figure of £3,000,000—the electricity to be generated by means of four stations situate between Killaloe and Limerick.

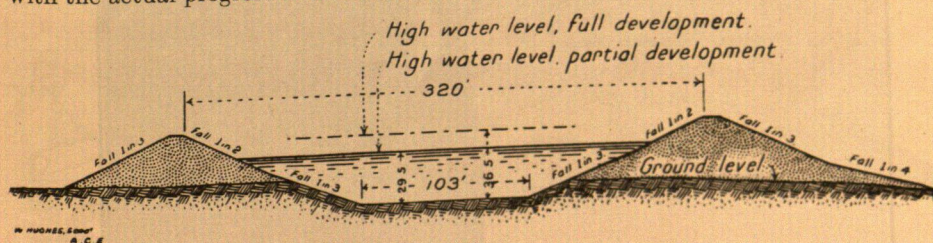
In 1921-23 some of the more prominent Irish engineers concentrated on a scheme of development in connection with the River Liffey, it being proposed to provide large storage capacity and utilise the Falls in the Poulaphouca area to develop electric power for Dublin and the cities and towns on the East Coast. This scheme was estimated to cost between 1½ and 2 millions, and was put forward to the Government for approval. The Government, however, while agreeing that the Liffey scheme had much to recommend it, took the broader view that if possible a scheme should be put in hands which would be of sufficient magnitude to provide, in the first instance, sufficient electric power for the present needs of the whole country and its anticipated needs in the near future, and further be capable of expansion at a later date to cope, if necessary, with the increased industrial development that would be the outcome of the project in the first instance.

It was, of course, obvious that the only river in the country that, from the point of view of size alone, could be expected to provide this power, was the Shannon. Accordingly, the Government, in 1924, appointed a committee of four Continental engineers who were considered experts in the work, to report upon the possibilities of the Shannon River as a source of electric power, and, soon after, a scheme for the hydro electric development of the River Shannon was presented to the Government and approved by the Dáil, the contract for the work being given to the famous German firm of electrical and mechanical engineers—Messrs Siemens-Schuckertwerke. The report of the experts divided the development into two headings—(a) the partial development to provide 90,000 h.p., which is considered ample for the present needs of the country, and its needs in the immediate future; and (b) the full development, providing a further 90,000 h.p. to meet further requirements, or a total power output of 180,000 h.p. It is the contract for the partial development that is now proceeding—the work on which has come to be commonly called “The Shannon Scheme.”

Some idea of the amount of power proposed to be generated even in the partial development may be gathered by comparison with the lighting station at the Curragh Camp, a place with which, no doubt, all ranks of the Army are now familiar. This station, though small, is one of the most modern and up-to-date in this country, and on an average load generates sufficient electricity to supply the needs of a population of 4,000. The central power station in the partial Shannon development will generate about 500 times this amount, or sufficient for a population of 2,000,000. The figures given cover not only the needs from the point of view of light alone, but industrial needs as well. A great many people look on the Shannon Scheme merely as a means of providing cheap electric light. This aspect was, and very properly so, only a very secondary one from the point of view of the promoters. The main need in this country is a cheap source of power and it was to meet this need that the harnessing of the Shannon was proceeded with. It is well to point out also that even in the home electricity may be adapted to many other needs than that of merely lighting the house. Heating, cooking, and power for various other domestic work can be supplied by electric current, and there are now on the market a number of reliable labour-saving electric devices which can all be used to assist the housewife.

The actual work on the Scheme itself may be divided into two heads—(a) Civil construction work to provide the powerhouse, with its necessary adjuncts; (b) Erection of transmission lines. The civil construction work under (a) consisted of the provision of intake works to draw the water from the Shannon about three miles S. of Killaloe (see map Fig. 1), the construction of a power canal approximately $7\frac{1}{2}$ miles long to bring the water to the powerhouse, the erection of the powerhouse proper at the village of Ardnacrusha, and the excavation of a tailrace—a canal to take the water, after it had been utilised for development purposes, back into the river at Parteen, about 2 miles N. of Limerick. The contractors—Messrs. Siemensschuckertwerke—sublet the civil engineering portion of their contract to their sister firm of Siemens Bauunion—these two firms, together with the firm of Siemens & Halske, who deal with telegraphs, telephones, and wireless, etc., constituting one of the largest and most complete engineering organisations in the world. It is interesting to note in passing that the firm of Siemens Bauunion have just completed a hydro-electric scheme for the supply of power to the city of Tiflis, the capital of the State of Georgia, in the Caucasus, one of the new states which have come into being as a result of the upheavals consequent on the World War. This scheme was smaller than that on the Shannon, only 18,000 h.p. being developed, but its essential features were very similar; the same methods of construction were adopted by the contractors, and the work has been completed—the power being now in daily use—to the satisfaction of the government and people of the country concerned.

The contractors commenced work in the Autumn of 1925, and before dealing with the actual progress of the work, it is as well to point out what the undertaking



CROSS SECTION OF POWER CANAL.

Fig. II.

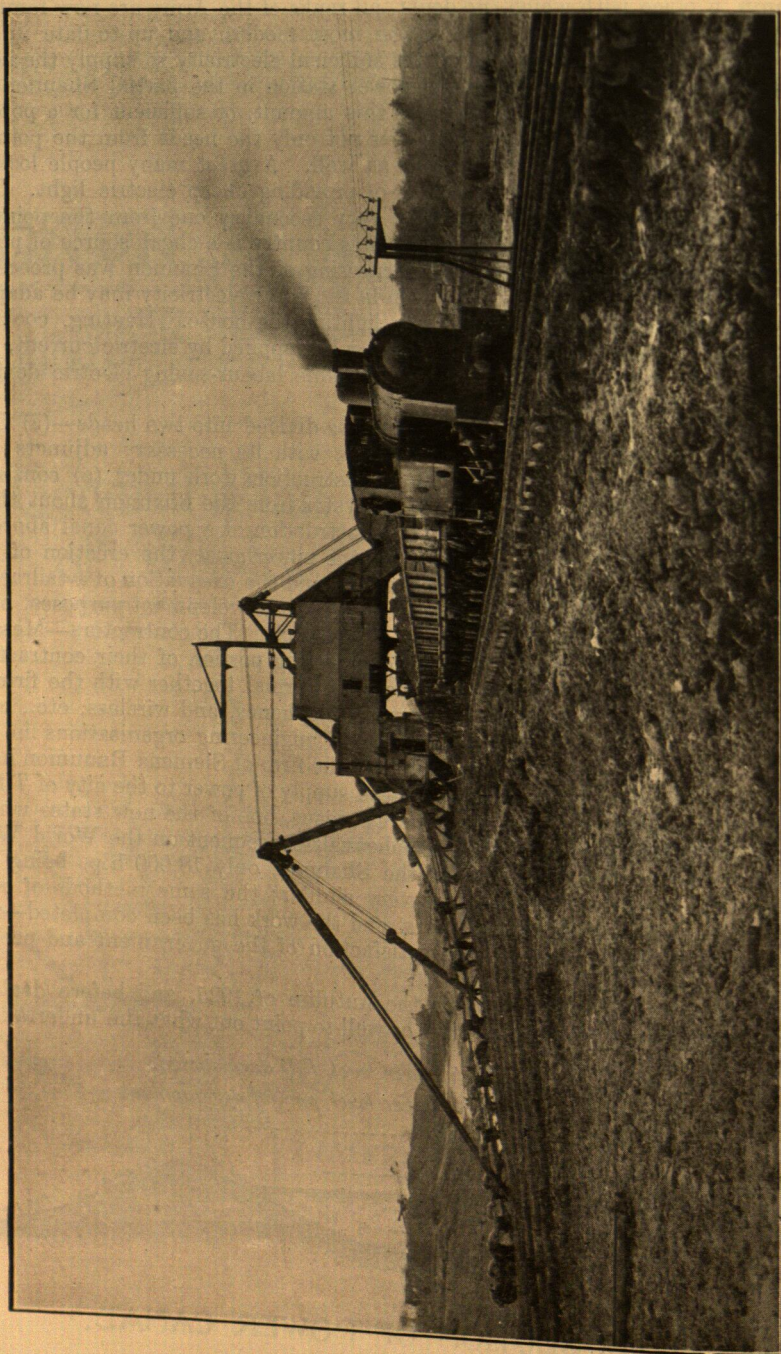


Fig. 3.—Multiple bucket excavator.

entailed. Most of the falls on the River Shannon are located in the Castleconnell area, and the scheme as now being executed makes all the use possible of the difference in level. The fall of the river between Lough Derg and Limerick amounts to 100 feet, and the works have been so designed that this whole fall of 100 feet will be available at the powerhouse at Ardnacrusha. In order to do this, it has been necessary to raise embankments along the greater part of the power or head-race canal, to excavate the bottom of this canal, to make a great excavation on the site of the powerhouse itself, to provide the 100-foot fall already mentioned, and to further excavate for the tailrace. Most of the excavation at the powerhouse site, and in the tailrace, has meant blasting through solid rock. When speaking of the head and tail race canals, it is necessary to point out that this "canal" is actually larger than the River Liffey at O'Connell Bridge, as the cross-section (Fig. 2) shows. The immensity of the work can easily be gauged from this comparison. This portion of the work, which is now well under way, presented possibly the greatest problems to the contractors, and on it to a large extent the successful completion of the structures which are to be erected later depends. The moving of such huge masses of earth, 10,000,000 cubic yards in all, and the blasting, breaking up and subsequent removal of 1,300,000 cubic yards of rock made it obvious that unless mechanical power were used as far as possible, the contract would never be completed within the period of nearly four years allotted. Mechanicalization has been adopted everywhere throughout the work, man-power being only used where machines would not be economic. Without going into a maze of technical data, it would not be possible to describe the various machines in use—the illustration of the multiple bucket excavator reproduced herewith (Fig. 3) will give some idea of what mechanical power on a project of this nature means. Beyond it may be seen a bank-building machine, of which a rough diagrammatic section is shown in Fig. 4, and this is worthy of special notice in that it was specially designed and constructed for work on the Shannon, and has been found extremely successful. A photograph of the actual machine at work is shown in Fig. 5. The principle on which the machine works is clearly shown in the diagram. The greater number of these huge machines are worked by electric power which is supplied from a central temporary power station near the main powerhouse site at Ardnacrusha. Though called a temporary power station, this is in reality a first-class modern electric powerhouse, developing a total of 4,500 h.p., and consisting of seven four-cylinder and two two-cylinder Diesel engines. The thoroughness of the construction of this building, and the splendid machines which have been installed may be considered as typical of the spirit which permeates the entire undertaking.

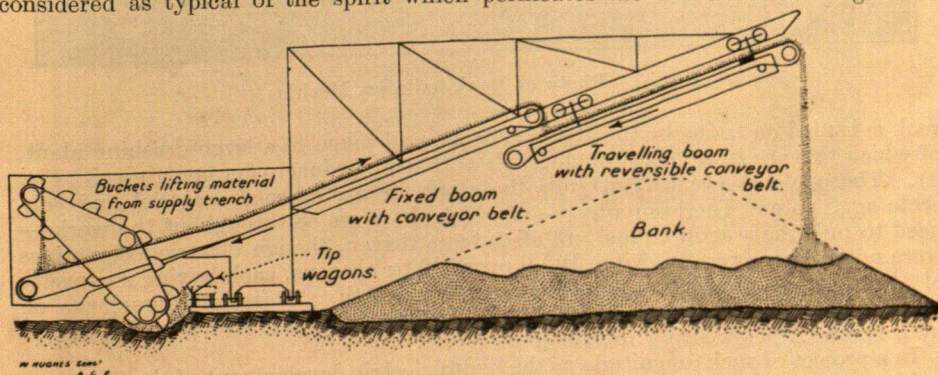


DIAGRAM OF BANK-BUILDING MACHINE.
Fig. IV.

In order to enable repairs to be carried out expeditiously, the contractors have also erected a machine shop, which is filled with practically every kind of modern cutting and fitting machinery, and is capable of undertaking repairs to any and all of the huge machines on the works, and even the actual manufacture of spare parts. This shop alone employs 110 men. In addition, there is a carpentry workshop, a toolmaker's shop, a foundry, and a large stores. Even the oxygen which is used in the oxyacetyline welding processes on the works is made at Ardnacrusha, a special plant being installed for this purpose. A modern laboratory in which tests of all the various materials used in the construction are carried out, is also a feature.

While electrical power from the central power station has been made use of as far as possible, most of the large excavators in use in the tail-race are steam driven. They move on caterpillars and can take up $2\frac{1}{2}$ cubic yards (about 4 tons) of rock at each shovelful. The rock is blasted usually three times daily, the holes being drilled by electric-driven rope drills, compressed air drills being also used. The

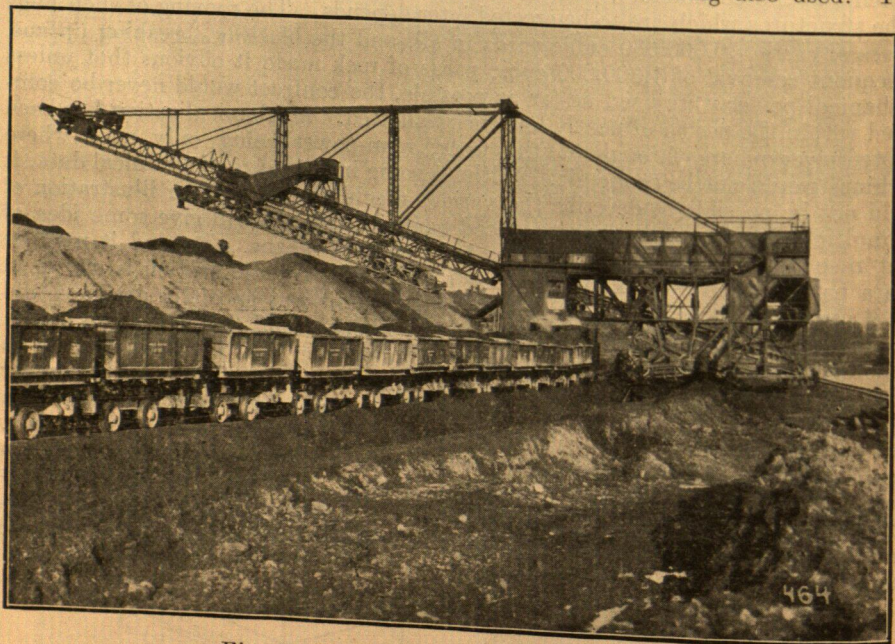


Fig. 5.—Photo of Bank-building Machine.

rock is loaded on trains by the steam shovels, and taken to a large crushing plant, of which two are installed, a photograph of that at Ardnacrusha being given (Fig. 6). These plants break and grade the stone for use as road material and concrete aggregate. The locomotives—of which there are 58 throughout the works—used to pull the wagon trains, are also steam driven, though electric locomotives were noticed on a recent visit. In all over 500 tip wagons, each having a capacity of about 7 tons, are in use removing rock and earth. These, of course, run on rails which can be taken up and relaid rapidly by hand, and also moved sideways by a special track-shifting machine.

In a project of such magnitude as the hydro electric development of the Shannon, it is essential that the workers be housed as near to the site of the work as possible. Hence the contractors erected camps at the various more important centres. Four camps in all have been erected—the main camp at Ardnacrusha and smaller

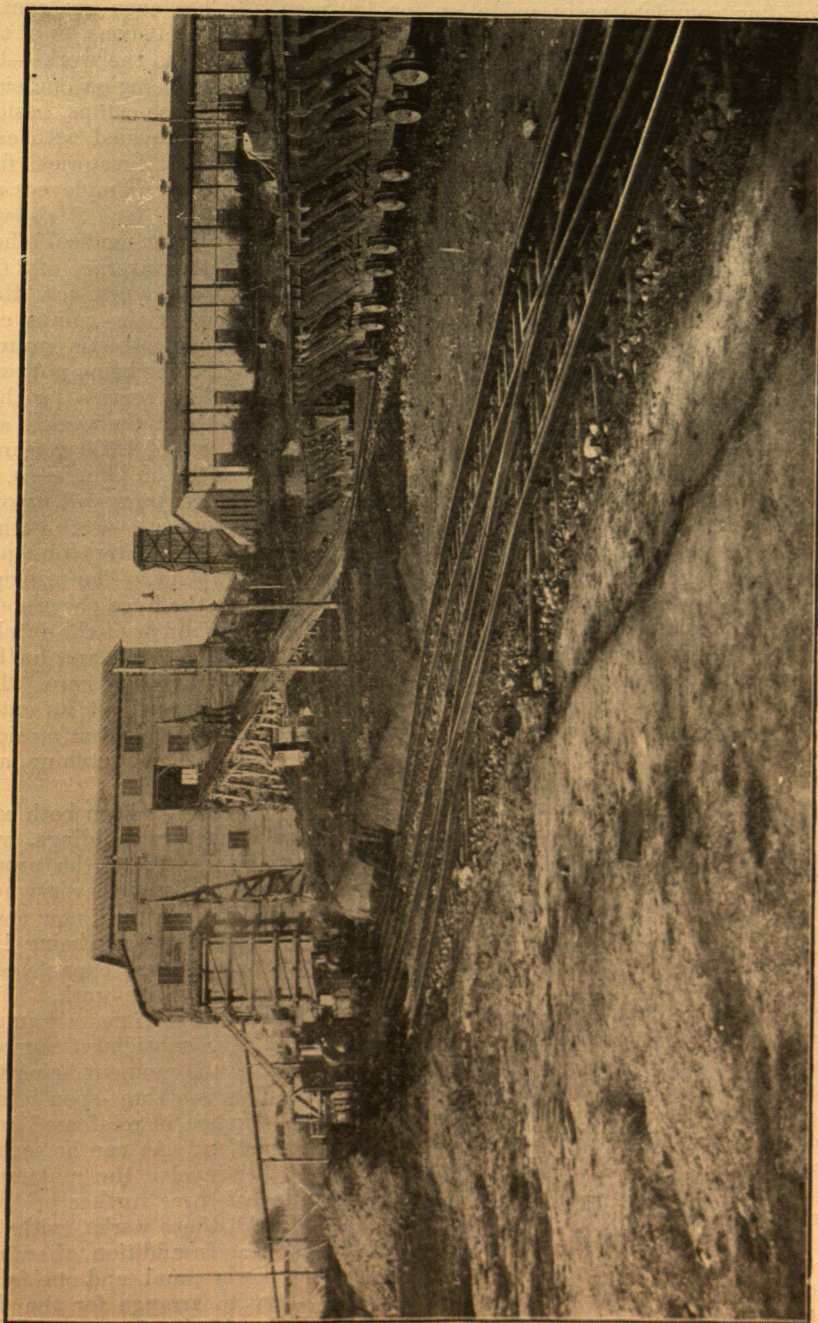


Fig. 6.—Crushing Plant.

camps at Cloonlara, O'Brien's Bridge and the intake works. To be quite correct, that at O'Brien's Bridge is not a camp, an old disused mill being reconverted and providing complete accommodation for 180 men. It has even got central heating. The main camp at Ardnacrusha is well worth a visit. It consists of two separate camps on either side of one of the main approach roads to the works—the camp for the Irish workers, with accommodation for about 750, being on one side, quarters for about 200 German workers being at the other. These camps, besides giving sleeping and living accommodation to the workers, are provided with canteens, recreation rooms, dining rooms, bath-houses, fumigators, lavatories, fire-fighting appliances, etc.; married quarters for some of the German employees are also provided. Mass is celebrated in the camp on Sundays and Holidays, and a special first-aid station and hospital are installed, a resident medical officer being employed by the contractors. Considering the fact that an average of 2,000 workmen are employed continuously, the number of fatal accidents, less than twelve in all, is extremely low. The sanitation and lay-out of the camps certainly leave nothing to be desired, and adequate recreation and athletic grounds are provided—the “Shannon Schemers” hurling and football clubs being now well established. In addition, the contractors have provided a 'bus service for their employees—this service covering practically the whole length of the works, and plying between Limerick and O'Brien's Bridge. In all, upwards of 2,000 workmen are employed, about 1,500 of these being accommodated on the building sites.

Apart from all the excavation work already outlined, the contract will involve the placing of 200,000 cubic yards of concrete, and this portion of the work—while not yet very far advanced—has up to the present given the most interesting problems from an engineering and also from a spectacular viewpoint. The principal concrete structures in the finished scheme will, of course, be the huge powerhouse itself with its auxiliary buildings, and the weir across the Shannon at the intake. This weir will raise the river level at this point to that of Lough Derg, and further embankments as shown in the dotted lines on Fig. 1 will be necessary here. The sides of the head-race canal will themselves be concreted throughout its entire length between high and low-water level—this being necessary to prevent erosion; the remainder of the interior of the canal will be rendered with stone pitching, and the top and outer slopes covered with soil and sown with grass seeds.

Since the work commenced in September, 1925, the progress has been both consistent and rapid. Apart from the provision of all the temporary buildings, hutment camps, power station, workshops, offices, etc., necessary to the proper execution of the work, the progress on the permanent scheme is now everywhere apparent. As already stated, the excavation of the powerhouse site is now completed, and the concrete foundations for the permanent structure are being laid (Fig. 7). Both at the weir and powerhouse sites, huge cable cranes capable of a 6-ton lift, are installed for placing the concrete and for excavation work. The temporary dam has been completed at the weir, and excavation to get a foundation for the permanent structures is now proceeding. The subsidiary concrete works are also fairly well advanced. The most noticeable at the moment being the new road bridge across the head-race at Blackwater. This is a three-span bridge of a cantilever type, and represents the most modern practice in reinforced concrete construction. It is now well on the way to completion. As can be seen—again consulting Fig. 1—the subsidiary operations further involve the making of a number of new roads (shown dotted) and the erection of three further bridges, two across the head-race and one across the tail-race. All these works, with the exception of the bridge across the tail-race, are in hands. In addition, there are a number of small streams which cross the line of the power canal, and one fairly large stream—the Blackwater River. It was necessary to arrange for the disposal of the flow of these streams, and it has been dealt with by the construction of a number of syphons under the canal, the largest—that at Blackwater—being

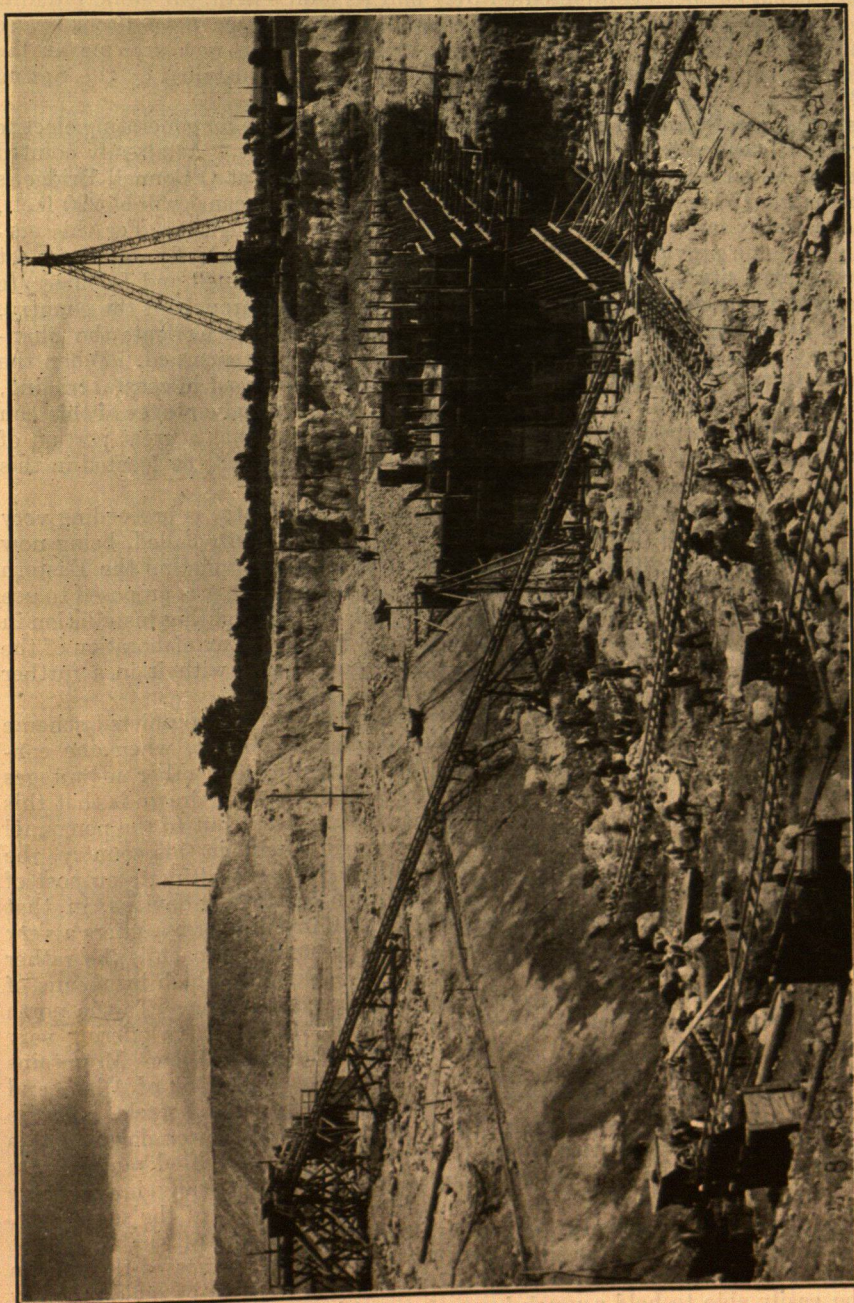


Fig. 7.—Laying the concrete foundations.

now completed, and the canal banks actually constructed above. The head-race or power canal has been completed for over half its total length, the stone pitching being now placed in position, and the excavation of the tail-race in solid rock is also well advanced. The permanent machinery, turbines, etc., is now arriving on the site from Germany, and some of it will, it is expected, be installed by the Spring of 1928.

It is not generally known that apart from the fact of its use for generating electric power, it is intended to use the canal for navigation purposes. As already pointed out, it will be larger than the Liffey at Dublin (the Liffey at O'Connell Bridge is approximately 150 feet wide—the normal width of the power canal will be 220 feet), and hence fairly large steam boats will be able to pass through it. For this purpose the scheme provides for a number of navigation locks—chiefly, of course, at the powerhouse sites. At the moment, the falls at Castleconnell and Doonass are circumvented by a small canal, similar to the other canals throughout the country, and this, of course, means that only ordinary canal boats can navigate the Shannon above Limerick, so far as through water-borne traffic is concerned. When the scheme is completed, small steam boats, of the usual type used in coastal trading, will be able to proceed as far as Athlone, and the numerous advantages of this can easily be realised, especially taking into account the fact that a great portion of the factories and large consumers of electricity will, it is hoped, be located in this area.

The erection of the transmission lines throughout the country is proceeding very rapidly, the "Shannon Scheme Poles," as they are commonly called, being now a familiar sight. The contractors have concentrated on completing the Eastern portion of the transmission scheme first, owing to the fact that it is proposed to use the present Dublin Station as a source of supply for the new lighting installation in Waterford City. The scope of this article does not permit of any elaboration of the erection of the transmission system, but it is hoped to deal with it in a further article when the work is more advanced.

Although the location chosen for the powerhouse site in the completed scheme was, of course, completely governed by the engineering aspect, when one considers the military aspect in detail and realises the tactical and other advantages inherent in the site as chosen, the only conclusion which can be drawn is that this location is the best available. It is hardly necessary to point out to the personnel of an Irish Army that in most of the great campaigns fought in this country, the retreating side have ultimately fallen back on Limerick—the ultimate outpost of the Shannon-Athlone line of defence. The reason for this is obvious, in that Limerick, no matter from what side approached by an invading army, offers a very difficult problem. From the sea, and in the west, the only approach is the rather narrow and fairly shallow Shannon Estuary—the blocking of which by means of mines or sunken obstacles would be a comparatively easy matter. To the north there is the barren hinterland of Clare—rapidly undulating country offering very little cover to advancing troops. In the north-east the Slieve Bloom Mountains and Keeper Hill—and further out to the east, the impassable Bog of Allen, and south-east, perhaps, the country is somewhat open, though lower down in this area we find a very good barrier in the Galtees and their associated ranges. On the south and south-west the Kerry Mountains offer a practically impregnable barrier. Hence, it can be seen that with the possible exception of the south-east, approach to the City of Limerick by an invading army in time of war would not be at all an easy matter, taking into account only the difficulties of the terrain which has to be traversed; and a small defending force capable of rapid mobility would be easily able to hold a much larger force at bay. The site chosen for the powerhouse has, in addition to the advantages already cited for the city of Limerick itself, the fact that being some miles on the north-west side of the Shannon

River, it is closed from the south-east—the side on which the city is most liable to attack. Moreover, it is situated on an eminence which overlooks and controls the country, both to the north in Clare and south in Limerick, though this disadvantage is to some extent counteracted by the fact that it is thus rendered a target for long-range gun-fire. The topographical and strategic conditions to a large extent minimise the danger of an attack from either land or sea, and it will be seen that such conditions must also have a bearing on attacks from the air. If an air attack is launched anywhere on the land side, the base will have to be in friendly and accessible territory, and owing to the difficulties of terrain already mentioned will necessarily be a good distance from the objective, necessitating an air journey of some hours for, say, a heavy bombing plan, with consequent increased danger of forced landings. It will, further, give time to the protective force to arrange smoke screens and launch counter-attacks, as well as preparing anti-aircraft guns for action. From the sea, of course, the distance is not so great, provided enemy aircraft-carrying ships could come close in. If, however, proper advanced listening posts are used in conjunction with aircraft for counter-attacks, as well as anti-aircraft guns and defences, the protection of the works will be adequately met.

In the event of war or other disturbance, the military protection of the completed project at once assumes an importance of the first magnitude. Providing as it will both power and light for the whole country, its destruction would, apart from the actual damage caused, entail huge consequential loss, and inconvenience to the civil population. Hence the authorities have already taken steps to ensure its protection. A fairly large barracks will be built at Ardnacrusha, with accommodation for approximately a battalion—this barracks controlling, protecting and overlooking the vital powerhouse, with its subsidiary buildings, as well as the tail-race and portion of the head-race. In addition to this, a military post will be located at the intake works to protect the weir, embankments and intake buildings. The designs for most of these works have now been completed, and it is hoped that their construction will be in hands in time to enable their completion to synchronise with the completion of the scheme. At the moment one defence post is already in existence—a strong guard being posted on the explosives stores at Doonass House. The guard is located in a hutment camp on a site convenient to the magazine—the camp being complete in all respects. This camp was erected last winter by the Southern Command Company of the Army Corps of Engineers, and considering the difficulties involved, owing to climatic conditions and the inaccessibility of the site, the erection and fitting-up of the buildings reflect credit on all concerned. The question of defence against aircraft—probably the most important aspect of the defence of the scheme—is, of course, receiving full consideration.

The question of the adaption of electricity to the purposes of defence is one that is at the moment only in its infancy, and is, it is understood, the subject of exhaustive research in other countries. It is not too much to hope, however, that the time will come when electricity can be made to take, to a certain extent, the place of explosives for propulsion of shells, etc., and if this could be achieved, the problem of our coastal defence would to a large extent solve itself. Of its many uses in time of war, as a source of power for the production of munitions, and means of transit, it is unnecessary to treat in any detail.

Enough, however, has, it is hoped, been said to show that both from the professional point of view and that of utility and adaptation, the hydro electric development of the Shannon has many aspects of interest for the soldier, and more particularly for the Officer. The cost of the partial development, when completed, will amount to upwards of £5,000,000, and the full development £8,000,000. These figures may seem very large, but it is only a matter of comparative magnitude; one scheme in Canada, which was recently completed—the Queenston-

Chippawa Development of the St. Lawrence—costing 100,000,000 dollars, or £20,000,000, and this is only one of the huge schemes in operation in that country. It is proposed in the near future to spend about £7,000,000 on the production of electric power from the Severn in England, and the following figures give the approximate totals expended to date in hydro-electric schemes in other countries, as well as the horse-power generated:—

				H.P.
Canada ...	...	£70,000,000	...	1,200,000
Germany ...	...	£12,000,000	...	400,000
New Zealand ...	...	£5,700,000	...	113,000
U.S.A. ...	...	£200,000,000	...	80,000,000 (up to 1925).

In addition, the New Zealand Government propose to inaugurate schemes giving a further 270,000 h.p. at a cost of about £12,000,000 in the near future.

These figures go a far way to show the wisdom of the Irish Government in proceeding with a scheme of such magnitude, and further, do away with a popular conception that on account of its very size alone the scheme is foredoomed to failure. It is generally admitted by all engineers of standing that the proposal is quite feasible, and a visit to the works, where the huge organisation of the contractors and the competent supervision of the Government engineers are at once apparent, will immediately dispel any further doubts that may be entertained.

The photographs used to illustrate this article have been furnished by Mr. J. K. Prendergast, Resident Government Engineer, and the diagrams are also based on data furnished by him. The best thanks of the author are due to Mr. Prendergast and his staff, and also to Dr. McLaughlin and the staff of Messrs. Siemens-Schuckert (Ireland) Ltd., for the valuable assistance given in connection with its preparation.

A BRIEF HISTORICAL ACCOUNT OF THE DEVELOPMENT OF WIRELESS

By MAJOR ARCHER, O/C. Army Signal Corps.

THE universal appeal of wireless is probably unique in the history of scientific discovery. To the physicist and engineer it has opened up an unlimited field of research and development, to the business man fresh opportunities for financial development and possibilities of world-wide communication, to the scientific amateur a new and comparatively cheap plaything, to the public at large an additional means of amusement, to the soldier new methods of intercommunication and consequential problems. It primarily gripped popular imagination by the romance and human interest attaching to its application to the safety of life at sea, as exemplified in the saving of the passengers of the *s.s. Republic* sunk off the coast of the U.S. in 1909, the saving of 700 lives when the *Titanic* was sunk in mid-Atlantic in 1912, and in the following year when ten vessels rushed to the assistance of the burning liner *s.s. Volturno* and saved the lives of 521 passengers. The period of the Great War, whilst causing a very rapid development in wireless, necessarily restricted the activities of the "Man in the Street," and it was not until the removal of war-time restrictions and the incorporation of the British Broadcasting Company (1922) that popular interest revived. In view of the importance of wireless as a means of communication to military organisations, it is felt that a brief historical survey of its development will be of interest.

It should be understood that wireless is not the invention of any one man. In its present form it is the product of the investigations of numerous physicists, mathematicians and engineers. It would be tedious to recount even briefly the numerous discoveries which have combined to produce the modern wireless instrument. In the following pages an effort will be made to give a coherent account of the main discoveries which have influenced the evolution of wireless apparatus.

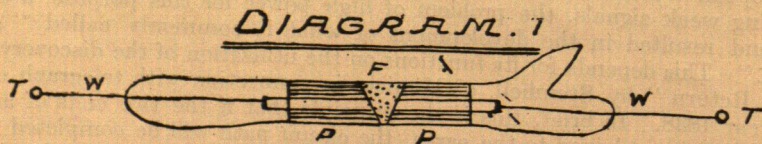
The first experiments in an effort to communicate from one point to another without the use of connecting wires, made use of the earth or of water as a conducting medium. Considerable success was attained, but it was found that the cost of power to cover any useful distance was prohibitive. Little practical use was made of investigations of this nature until the development of the wireless valve during the European War. Owing to the adaptability of the valve for use as a means of amplifying weak signals, the problem of high power for this purpose was overcome, and resulted in the development of what is commonly called "ground wireless." This depends for its functions on the utilisation of the discovery of the "Earth Return" by Steinheil, of Munich, in connection with telegraph circuits in the year 1838. In brief, this is the principle that if the two ends of an electrical conductor are joined to the earth, the circuit path will be completed by the earth between the two ends of the conductor. It is obvious, of course, that in such a system there is a conductor joining the two points, and that though the term "wireless" may be strictly accurate, it bears no relation to Radiotelegraphy, which depends for its action on the principle of the emission of electro-magnetic waves.

A prediction as to the existence of such waves and their nature was first made by Clark Maxwell in a paper read before the Royal Society in 1867. Maxwell was a mathematician and had arrived at his conclusions by pure reasoning. Not being a physicist, he did not produce experimental proof of his deductions, and it remained for Heinrich Hertz, in 1887, to produce scientific proof of Maxwell's theories. Hertz, whilst experimenting with a Wimshurst machine, observed that a broken metal hoop lying on an adjacent table in his laboratory, emitted electric sparks at

the broken part. On closer examination he found that the spark was forming an arc across the gap in the hoop. This led him to further investigations of the phenomenon, and he successfully demonstrated the passage of electro-magnetic waves through the ether, measured their velocity, and proved their similarity to light and heat waves in the nature of their vibrations and their susceptibility to polarisation and refraction. This discovery of Hertz formed the basis of future development in wireless, and it is in the practical application of his discovery that Marconi has gained such renown.

It is interesting to recall that some years previously—1879—Professor D. E. Hughes, whilst experimenting on the microphone, found that the spark discharge of a Leyden jar caused a sound in a telephone in an independent circuit some distance away. Using a detector of carbon and iron, he found that the telephone in circuit with such detector would be affected by the waves set up by an electric spark at a distance of a few hundred yards. Being convinced that this was due merely to electro-magnetic induction, he gave no publicity to his discovery. Hughes' detector was later rediscovered by Professor Branly in Paris, in 1891, and was a considerable advance on the detector used by Hertz. For the purpose of Hertz experiments he used a metal ring with a small gap terminating in two brass balls, the distance between which could be adjusted by a micrometer screw. This arrangement was known as a Hertz resonator, but of necessity was not a sufficiently sensitive detector. Branly's detector consisted of a tube of loosely packed metal filings which ordinarily are of poor conductivity, but which when subjected to the influence of an electric spark at a distance, automatically crowded together and provided a path of greater conductivity. A circuit which included, therefore, a detector of this form and a telephone receiver, would, when brought within the influence of an electro-magnetic wave, respond thereto by an audible sound in the telephone receiver. From the behaviour of the metallic filings, this detector was given the name of a "Coherer," by Sir Oliver Lodge. Branly's form of the Coherer was improved upon by other experimentalists, amongst them being Lodge and Marconi. The latter's form of the Coherer was the most practical and successful.

Having investigated the advantages of different metals, he made use of a mixture of filings of a certain degree of fineness, consisting of five per cent. silver and ninety-five per cent. nickel. These he placed in a glass tube between two silver plugs, from which were taken platinum terminal wires. The tube was then exhausted and sealed. A rough idea of this detector will be obtained from Diagram I.



There appears to be little doubt that it was some form of a Coherer which was used as a detector by Hughes in the experiments already referred to, but as he did not publish an account of his discovery it is difficult to say what form it took—probably a combination of carbon and iron.

For the generation of electro-magnetic waves, Hertz used an induction coil, the secondary terminals of which were connected to large metal plates or balls from which protruded short rods terminating in small brass knobs. With the creation of sparks at the knobs he energised his receiver.

In 1895 Marconi began his experiments, using also an induction coil for the production of an electric spark. He, however, connected one terminal of his induction secondary to a metal plate laid on the ground, and the other to a tin can

placed on top of a pole. These terminals were also connected to two small brass balls, the distance between which could be adjusted. He similarly connected one side of his Coherer to an earth plate and the other to an insulated conductor. He then began to systematically investigate the relation between the height of the tin can above the ground, and the distance at which his Coherer would be affected by the electric spark, and found that the greater the height the greater the distance. He finally transmitted signals over a radius of a mile and a half, when he used hollow metal cubes one hundred centimetres a side, placed at a height of eight metres above the ground.

In the following year Marconi replaced his tin cans by aerial wires suspended from the top of high masts, or from kites covered with tinfoil. His receiving circuit consisted of his Coherer with a pair of inductances in parallel, and a sensitive relay with a single cell in series with the Coherer. This relay was used to actuate a Morse printing instrument worked by a separate set of cells. The inductances compelled the electric oscillations to expend themselves on the Coherer itself.

In 1896 he came to England and applied for his first British patent, and in the same year he demonstrated his apparatus to Preece, the Engineer-in-Chief of the British Post Office, and successfully transmitted signals over several miles on more than one occasion. From this time onward Marconi advanced rapidly to new successes. It would be impossible to chronicle them all, but the following will show the practical utility of his method and his rapid progress:—

In 1896 he transmitted signals over a distance of eight miles on Salisbury Plain, in the presence of representatives of the Army and Navy.

In May, 1897, he spanned the Bristol Channel between Penarth and Weston-Super-Mare, a distance of nine miles.

In July of the same year he demonstrated over twelve miles of sea between warships of the Italian Navy, at Spezzia.

He then linked Alum Bay, Isle of Wight, with Bournemouth, a distance of fourteen miles over sea.

In May, 1898, the Lighthouse, Rathlin Island, and Ballycastle, were linked up, at the request of Lloyds.

In July of the same year the regatta at Dun Laoghaire was reported for the *Dublin Express* by wireless, from the steamer "Flying Huntress," the distances covered being from five to twenty miles.

In December of the same year the East Goodwin Lightship was linked up with the Southforeland Lightship, and in March of the following year he established communication between the latter station and Wimereux, near Boulogne.

The practical utility of Marconi's apparatus was forcibly demonstrated in April, '99, when during a dense fog in the Channel, the East Goodwin Lightship was rammed by an outward bound steamer, and seriously damaged. The Lightship communicated with the South Foreland Lightship, and assistance was promptly sent from Ramsgate.

In 1897 the Wireless Telegraph and Signal Co., Ltd., had been formed to exploit Marconi's invention, and subsequent to the utilisation of his apparatus during the manoeuvres of the British Navy, in 1899, contracts with large shipping companies and with Lloyds' Corporations for the supply of his equipment were made, and the commercial success of his system thus established.

The first record of its use in warfare was when some half-dozen sets were sent to South Africa for use during the Boer War. Owing to the fact that protracted tests were not carried out beforehand (and to the inexperience of the personnel) these sets did not prove very successful.

Marconi's next important discovery was in the efficiency of the "Bent" or inverted "L" aerial. His earlier experiments were conducted with vertical wire aerials either of single or multiple strands of wire. After prolonged experiment he found that if a small portion of his aerial was vertical and the remainder

horizontal, it possessed certain directive properties. In other words, the radiation from the vertical or cased end of the aerial was greater than from the horizontal or free end. Diagrams 2, 3 and 4 explain this more clearly.

If in each Diagram we take A to be the transmitting station, and B the receiving station, the results obtained at B in each case will be:—

Diagram II.—Very poor signals received.

„ III.—Fair signals received.

„ IV.—Good signals received.

DIAGRAM. 2.

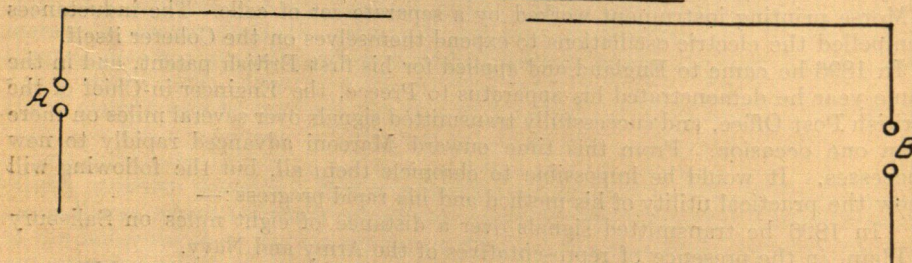


DIAGRAM. 3.

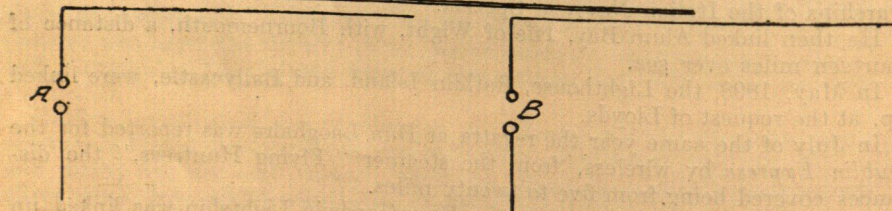
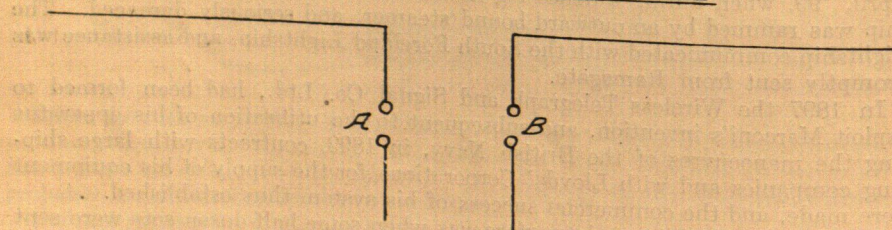


DIAGRAM. 4.



It should be understood that these results are comparative and are affected by local conditions such as the power of the transmitting station, the sensitivity of the receiver, and the absence or presence of "screening" obstructions. Assuming that local conditions at both A and B are equal, the results would normally be as shown. A point would be reached when, owing to the distance between A and B, signals would disappear altogether, under conditions shown in Diagram II. and

III., whilst still being perfectly audible under conditions shown in Diagram IV.

Up to the year 1900 the induction coil had been the method used by experimentalists for the production of electro-magnetic waves. The waves so produced were of a rapidly decreasing amplitude, and each train of oscillations died away quickly or were "damped." This was a decided disadvantage. The production of continuous waves or "undamped oscillations," would give greater efficiency by radiating more energy in a given time with less power input, and greater selectivity by keeping the wave-length constant. In this year the problem of the production of undamped oscillations was solved by the discovery of the "singing arc" by Duddell. He formed an electric arc between two carbon rods connected to an oscillatory circuit comprising a condenser and inductance in series, and found that the arc gave off a musical note, the pitch of which depended on the capacity and inductance of the oscillatory circuit. By furnishing the arc with continuous current and fitting a resistance in series with the arc, continuous oscillations are set up in the oscillatory circuit. Duddell's arc in its original form was not capable of producing oscillations of sufficiently high a frequency to be of practical value for wireless, and it remained for Poulsen in 1903 to improve thereon, and produce the Poulsen Arc system which was of practical value. Poulsen used a carbon rod as his negative electrode and a copper tube as his positive electrode, keeping the latter cool by a water circulation within. The arc was created in a hydrogen or hydrocarbon gas atmosphere, crossed transversely with a strong magnetic field and shunted with a small capacity and large inductance. By this means he produced continuous oscillations of sufficiently high a frequency to come within the range of those required for wireless. This was the most efficient arc system developed, and it has since been considerably improved and adapted to radio telephony.

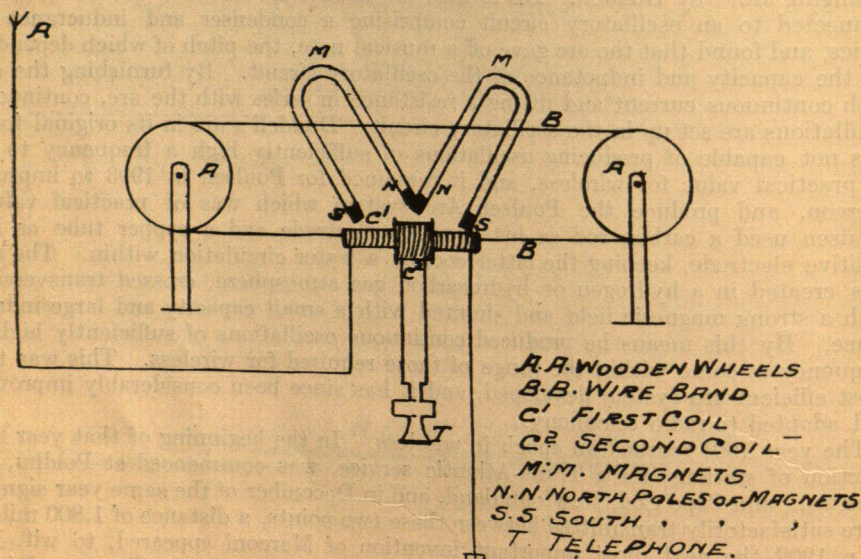
The year 1901 marked an epoch in wireless. In the beginning of that year the erection of stations, for a Trans-Atlantic service, was commenced at Poldhu, in Cornwall, and Cape Cod, Newfoundland, and in December of the same year signals were satisfactorily transmitted between these two points, a distance of 1,800 miles.

In 1902 the next most important invention of Marconi appeared, to wit, his "magnetic detector." This consisted of an endless band of silk-covered iron wires carried on two wooden wheels driven by clockwork. This band passes through a small glass tube round which is wound a coil of insulated wire, the ends of which are connected to aerial and earth. This tube is located in a shorter glass tube of slightly larger diameter round which is also wound a number of turns of fine insulated wire, the ends of which are connected to a telephone receiver. A pair of horseshoe magnets are so placed that their similar poles are opposite the last described coil. The moving band of wire is magnetised while passing under the poles of the magnet. An incoming oscillation will pass through the first described coil and cause an increase or decrease of magnetization in the moving band. This change will generate an induced current in the second coil and thus produce a sound in the telephone. Theoretically the apparatus is as shown in Diagram V. This detector proving very sensitive and reliable, easy to adjust and comparatively simple in its construction, superseded the "Coherer," until it was itself superseded by the discovery of the possibilities of the use of crystals as detectors. General Dunwoody, of the U.S. Army, was the first to discover the rectifying properties of the carborundum crystal in 1906. As the use of crystals for the reception of wireless signals is so widely known, it is not proposed to deal in this article with the theory underlying their use.

In 1904, Fleming took out a patent for the thermionic valve, which comprised two electrodes—a filament and an anode or plate. Fleming produced this valve as a result of his experiments on Edison's discovery in 1883 that the heated carbon filament of an electric lamp emitted charged particles. By introducing a second conductor into the bulb Fleming found that a current would flow from the hot

filament to the cold conductor, but not in the opposite direction. Such a lamp acted as an electric valve—it allowed a current to flow in one direction but not in the other. This valve was the original from which all other valves were developed, and in the year 1906 Lee de Forest brought out the first three electrode valve, which consisted of a filament and two anodes or plates. In the following year he patented another valve in which the third electrode consisted of a grid. Funda-

DIAGRAM. 5



mentally the valve has remained the same since that time, though its greatest development took place during the European War. The production of the valve completely revolutionised wireless. It enabled drastic reduction in transmitting power to be made, gave greater selectivity, and steadier wave-lengths, and by permitting the amplification of weak signals, gave an immensely increased range for equal power. It also decreased bulk and weight and made apparatus more portable. These advantages were primarily felt in military organisations, as the development of valve apparatus did not really begin to make itself felt until towards the beginning of 1916, and at this period military requirements being of primary importance, the benefit of the valve did not reach the public till after the European War.

It is not deemed necessary in this article to treat in detail of the theory of the operation of the valve. It is in such common use for broadcasting reception that there is little doubt a fair proportion of our readers have a good general idea of its functions.

In 1905 the erection of the Trans-Atlantic Station at Clifden was begun, and two years later it was opened for public service. It was at Clifden that the first high power directional aerial previously referred to was used.

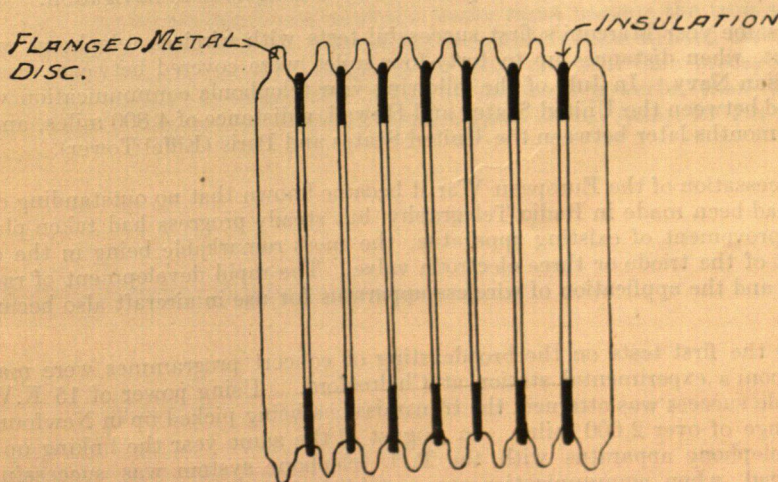
In 1906 Marconi produced his first high-speed "disc discharger." In this apparatus a synchronous spark was produced between two fixed electrodes and four studs protruding from the rim of a metal disc rotated at high speed. By this means slightly damped waves were produced. This was later improved upon

by the use of twenty-four studs on the disc, which produced an asynchronous spark with a more musical note. These sparks occurring at the rate of six per half cycle, produced a series of slightly damped oscillations following each other with great rapidity, so that in effect continuous oscillations were produced. This is the method of producing spark discharges used on all Marconi apparatus to the present day.

Another method known as the "quenched spark" was developed from a discovery of Wien in 1906. He found that when a condenser discharged between good conducting metallic surfaces placed so close to each other that a small spark took place, the spark was killed and the oscillations died out rapidly. By using a number of metal disc separated by thin insulation, but having portion of their surface exposed to one another, a series of quenched sparks with slightly damped oscillations is produced giving results similar to those achieved by the Marconi disc discharger. Wien's discovery was developed by the Gesellschaft für Drahtlose Telegraphie; Von Lepel, and others. This is the method adopted by the German Telefunken Co. for the generation of high-speed spark discharges. (See Dia VI.).

In 1907 Messrs. Bellini & Tosi began their experiments in directive wireless, which have produced for us the modern Bellini-Tosi Direction-Finder, or Radiogoniometer. As this subject may be dealt with in a later article, it will not be treated of here.

DIAGRAM. 6.



SKETCH. OF QUENCHED SPARK DISCHARGER.

From this year up to the period of the war, no startling developments took place. Existing apparatus was improved in design. Marconi's disc discharger, the Telefunken quenched spark, and the Poulsen arc methods of transmission steadily replaced the original induction coil. The "Coherer" was superseded by Marconi's magnetic detector, and this in turn was supplanted by the crystal detector.

Subsidiary companies of the Marconi Co. were formed in numerous countries for the exploitation of his patents, and the erection of high-power stations for public service was begun in the British Dominions, America, Russia, Spain, etc.,

etc. In July, 1921, the British Government entered into a contract with the Marconi Co. for the erection of a chain of high-power stations throughout the British Empire, as approved by the Imperial Conference the previous year.

In the same year the International Radiotelegraphic Convention, which aimed at producing uniformity of practice in the wireless services of all countries was signed in London. The regulations embodied in this Convention are those which at the present day govern International commercial working and usage, the broadcasting of meteorological information and of International time signals.

Consequent on the loss of the Titanic in April, 1912, the s.s. Scotia, equipped with Marconi apparatus, left Dundee in March, 1913, to patrol the waters of the North Atlantic and gather data regarding the movements of ice. In January, 1914, the "Safety of Life at Sea Convention," drawn up by an International Conference which met in London the latter end of the previous year, was signed. Of its seventy-four articles, twenty-three are concerned with the use of wireless as an aid for this purpose. This Convention also established a permanent patrol of two ships to undertake the destruction of derelicts dangerous to navigation; study and observations of ice conditions; and ice patrol. The United States undertook the duty of providing and manning the vessels, and the expenses therefor were divided in proportion amongst the contracting parties. At present there are no fewer than sixteen wireless stations working in conjunction with the Ice Patrol on the coasts of Nova Scotia, Newfoundland, and on the estuary of the St. Lawrence, that issue warnings as to the presence of ice dangerous to navigation.

In the same year Marconi's first successful tests with wireless telephony were carried out, when distances up to forty-four miles were covered between vessels of the Italian Navy. In July of the following year telephonic communication was established between the United States and Hawaii, a distance of 4,800 miles, and a couple of months later between the United States and Paris (Eiffel Tower).

On the cessation of the European War it became known that no outstanding discoveries had been made in Radio Telegraphy, but steady progress had taken place in the improvement of existing apparatus, the most remarkable being in the development of the triode or three electrode valve. The rapid development of radio telephony and the application of wireless apparatus for use in aircraft also became known.

In 1920 the first tests on the broadcasting of concert programmes were made from Marconi's experimental station at Chelmsford. Using power of 15 K.W., considerable success was attained, the transmissions being picked up in Newfoundland, a range of over 2,600 miles. In August of the same year the linking up of wireless telephone apparatus with the P.O. telephone system was successfully accomplished, when communication was established between a telephone subscriber in London and an aeroplane in flight to Paris.

The year 1921 saw steady progress being made in the substitution of valve apparatus for the older spark sets on many of the Marconi stations. Following this came the successful application of high-speed automatic transmitting and receiving equipment—Baudot and Wheatstone—to wireless apparatus.

The first link of the British Imperial Wireless Chain was forged with the opening in August, 1921, of the Leafeld Wireless Station. A 250 K.W. arc set was fitted at this station, which normally works to another at Cairo.

The following year saw the incorporation of the British Broadcasting Co., which was rapidly followed in other countries by similar schemes.

The start of broadcasting brought wireless actually into the everyday life of the public, and through the medium of popular magazines and daily papers its development for the past five years is widely known. We now have worldwide broadcasting, a public wireless telephone service, meteorological and time signal service, the guidance of ships and aircraft in bad weather and fog, by means of radiophares (wireless beacons) and direction-finding stations, an ice patrol—depending for its efficiency on wireless, an international life-saving service, partial secrecy due to the beam system of wireless, and finally “television”, all within the short space of thirty-two years since Marconi first started his experiments.

At this point I would draw the readers' attention to the second paragraph of my article. It may be thought that I have somewhat contradicted the statement made therein by giving so much prominence to Marconi's apparatus and developments, but it must be conceded that Marconi's inventions have stood the test of time, and that he was the first to put into practical and efficient execution the theories of Clarke Maxwell and Hertz.

BASIC PRINCIPLES OF LEADERSHIP.

The following four basic principles of psychology most vitally affect military command:—

1. Loyalty is given with greater readiness to a visible, rather than to a distant leader.
 2. Successful leadership means that the leader must become the true source of all the impulses which lead his followers to accomplish their allotted task.
 3. As a stimulus to loyalty, example is far more powerful than precept.
 4. In the exercise of leadership, praise is far more powerful than blame.—
- MAJOR-GENERAL SUMMERALL, Chief of Staff, United States Army, in *The Military Engineer*.

THE MILITARY ANTIQUITIES OF IRELAND.

By PROFESSOR R. A. S. MACALLISTER, LL.D., F.S.A.

THE military antiquities of Ireland may be primarily classified into offensive and defensive contrivances: I use this general word so as to include weapons and fortifications. Each division should be considered chronologically: but this is at present scarcely possible, as there are many problems of chronology as yet unsolved.

Let us take first the history and development of weapons of offence. Doubtless the first and simplest weapons of offence in the hands of man were a heavy wooden club or a cast stone; and very effective weapons they could be, when wielded by a powerful warrior. It is, however, not to be expected that in the climate of Ireland ancient wooden objects should be preserved indefinitely, except, indeed, when they are buried in the peat-bogs; or that we can identify from among all the stones in the country the particular one whereby some fighting man of antiquity sent his adversary to the world of shadows. We must, therefore be contented to leave such primitive weapons in the region of probability, without being able to produce any actual examples.

In the gravels by the sea close to the town of Larne there have been found what are generally regarded as the oldest implements of human workmanship as yet known in Ireland. A moderate estimate assigns to them the date 4000 B.C., though some would date them yet earlier. Among these implements, the most characteristic is a sort of pick, made of a more or less cylindrical bar of flint, rather blunt at both ends. This was probably a tool rather than a weapon, but like the heavy stone axe which may have developed out of this primitive implement, it could no doubt be used as a weapon on occasion.

Down to somewhere about 2000 B.C.—the date cannot be given except as a rough approximation—stone was the only material available for tools and weapons in Northern Europe. Copper had begun to be used at an earlier date in Southern countries, such as Egypt, but the knowledge of metallurgy had not as yet spread to the north. When copper began to be used in Ireland, the first objects to be made were a tool (the axe-head) and a weapon (the dagger). The latter was a short triangular blade, with a rounded butt, perforated with holes for rivets by means of which the blade was secured in a wooden or a horn handle. Numerous specimens of this weapon are to be seen in the National Museum.

As time went on, the dagger thus formed (itself derived from a pointed dagger-blade of flint) was developed into other and more elaborate weapons. Speaking as a layman in such matters, I imagine that the chief *desideratum* in military operations is to strike at the enemy while keeping him at a distance. The cast stone has an advantage over the club, for the latter requires its owner to come within arm's length of his adversary, and the adversary may also have a club and may get his stroke in first. The dagger compels the assailants to come within yet closer quarters. How to use this effective weapon at a greater distance was a problem which early presented itself to the primitive copper-age warriors. Their first solution of the problem was to fix the dagger-blade, not into a short handle, but at the end of a long staff, projecting from it sideways like the blade of an axe. Thus was developed the *halberd*, one of the most characteristic weapons of Ireland during the early stages of the age of bronze. Historically this is an important fact, Spain in these early days; for the halberd is also a very characteristic weapon of ancient Spain at the same early date.

The next development of the dagger was the bronze-pointed spear, which began to make its appearance somewhere in the middle of the Bronze Age—say 1200 B.C.

or thereabouts. Arrows and javelins were in use, as numberless arrowheads and javelin heads testify. But these were always tipped with flint, not with metal, for the simple reason that as these weapons, once shot away, would not be likely to be recovered, it would be extravagant to waste valuable metal upon them. But a spear differed from a javelin in that it remained in the hand of its owner, and was not cast away. A dagger fixed upon the end of a staff, and in a line with it (not, as in the halberd, at right angles to it) made the first spear. Beginning from this simple contrivance, improvements were gradually introduced; devices for fixing the head firmly to the shaft were invented; the artistic quality of the spear-head was greatly developed; till towards the close of the Bronze Age, say about 500 to 400 B.C., the spear-head had become the most beautiful product of the metal-worker's skill.

Meanwhile the triangular dagger itself continued to be made, side by side with the weapons derived from it. It increased in the length of its blade, and at last attained to such dimensions that it ceased to be properly a dagger at all, but a rapier. A rapier is a long pointed blade, differing from the sword in that it is adapted for thrusting, not for cutting. There is a magnificent rapier in the National Museum from Lissane, Derry, which is one of the finest bronze castings in existence. It is nearly 3 feet long and only about $\frac{3}{8}$ inch across. The rapier, however, was soon superseded by the sword, the last weapon to be added to the armoury of the bronze-age warrior. This weapon still had a comparatively short blade, and retained a sharp point, combining with it two cutting edges, so that it could be used as occasion required as either sword or rapier. When not in use it was kept in a leather or wooden scabbard; the metal mounts of such scabbards have sometimes been found.

It cannot be said that any specially new weapon was introduced when bronze gave place to iron, as the material for tools and weapons—a change which in Ireland happened somewhere about 350-400 B.C. Spears and swords were still the chief weapons of offence, the only difference being that these were now made of iron, and were heavier and more effective, if less artistic in design. The sword-blade was made longer and straighter, and the sharp point at the end was blunted. Arrows and javelins were still tipped with flint—I do not think that any *certain* discovery of metal-tipped weapons of this class has ever been made in the country; and occasionally weapons were still made of bronze, but in decreasing numbers. Some curious wooden daggers have been interpreted (rather doubtfully) as being dummies upon which to form a mould for casting daggers of bronze.

We now turn to defensive contrivances. So far as weapons of defence are concerned, the only class of object that calls for notice is the shield. Defensive body-armour seems to have been unknown in the country down to the late date when the Scandinavian pirates were raiding the country; indeed, the use of such armour may very well have been suggested by Scandinavian practice. Niall Glundubh, the redoubtable king who fought with the intruders, derives his nickname (it is said) from the fact that he protected his knees with leathern knee-caps—an unusual proceeding, otherwise it would not have caused remark.

The shields which have come down to us from ancient Ireland are very few in number, for the simple reason that these defences were usually made of materials which, though effective enough for their purpose, were perishable. Leather, wood, or wicker-work was a sufficient protection against the simple weapons of offence which we have been describing; but it is only by a rare chance that objects made of such materials can resist corrosion. The preservative qualities of peat have kept for us two shields, one of leather and the other of alderwood, both of which are to be seen in the National Museum. We have also one of bronze, found in Loch Gur, Co. Limerick. Though different in material, all of these shields are similar in character. They are circular or oval, and are ornamented on the outer surface with raised concentric rings and knobs (the latter do not appear on the

wooden shield). In the centre is a raised hemispherical boss, across which runs a straight handle-bar.

The chief contrivances of defence, however, are the numerous fortifications, specimens of which are to be found on almost every townland. We have not as yet a proper archaeological survey of the country, such as is at present being made in Great Britain, so that we cannot say how many forts are still in existence; but over 20,000 have been counted on the Ordnance Maps. Again, owing to the lack of such a survey, it is impossible to classify them satisfactorily, or to determine their chronological sequence; we simply do not know the date of the great majority of these interesting structures.

They are of many kinds, and of many degrees of elaboration, and it is likely that they extend over a very wide range of date, from the Bronze Age to the time of the Scandinavians. It is also probable that they served a variety of purposes. Some of them, for example, are most likely not fortifications at all in the strict sense; they are sanctuaries, erected round the grave of some remarkable man, and the surrounding wall is intended to prevent people from lightly intruding on the hallowed precinct. Others are simply fortified farm-steadings. It should be remembered that these forts were not always intended as protections against human enemies. There was at the time a subtler and a deadlier enemy of the farmer in Ireland, namely the wolf; and most of the simpler structures of the kind are nothing but cattle pens, designed to protect the farm-stock from this ever-present peril.

It is quite clear that most of the forts, so-called, cannot have been forts in the strictly military sense. For one thing, they are very rarely provided with water, and so could never have endured a siege. For another, they are often so placed that they are commanded from a neighbouring height, so that an attacker would have no difficulty in shooting missiles of various kinds into the precincts.

Such as they are, however, and without attempting to discriminate between the dates and the uses of the various types, we may describe the chief varieties which they present. The simplest kind is a circular enclosure, surrounded with a single wall of earth or stones. An earthen wall necessarily involves a ditch, for the earth must be taken from somewhere. Usually the ditch is outside the wall, but there are a few rare cases in which the ditch is inside. Though the shape is as a rule circular, D-shaped forts and square or rectangular forts are not uncommon. It is supposed that these are of later date than the round forts, but this has still to be proved.

Starting from this simple plan, we meet with a number of developments. Elaboration may take the shape of a multiplication of the surrounding ramparts. Forts with two ramparts are common enough; those with three are not infrequent, though distinctly rarer; those with four are extremely rare, and I know of none with a greater number. It is possible that the number of ramparts had something to do with the rank of the owner of the fort, but here again we have nothing but conjecture to guide us.

Or else the number of enclosures within a single system may be multiplied. Thus we may have what are called "figure-of-eight" forts, which consist of two circular enclosures conjoined. Or we may have two or more independent enclosures contained within one large rampart. The central group of buildings at Tara is a good example of this, and there is another fine example on a hill-top close to Castlerea.

The most interesting part of the forts, as they now remain, is the souterrain which is found in many of them. This is an underground passage, lined with stones and roofed with long lintels, which was probably a store-chamber or a place of refuge. There is an endless variety of plan in these curious structures. Some of them are mere short passages or little chambers. Others consist of a series of chambers, one opening out of another. Others again are labyrinthine passages, with side branches. Others contain unexpected secret rooms, concealed from the

casual visitor by a variety of ingenious devices. Others are ways of escape; they open in the middle of the fort, and lead to an exit outside its circumference. In such cases there is sometimes a trap to puzzle pursuers. The hunted makes good his escape; the hunter tries to follow him down the passage and presently comes to a blank wall. In the darkness it takes him some time to find the hole in the roof through which his quarry has made his way, and by the time he has followed him, he has got clean away.

Forts of one kind or another are to be found throughout every county, and whenever the archaeological survey is set on foot—a national undertaking in which the army would probably be able to give invaluable service—it is likely that much will be learned about them which we do not know now. The most remarkable examples of ancient fortifications are the great stone forts of the north and west, extending from the Grianan near Derry, through the gigantic series in the Aran Islands, to Cathair Geal beside Caherciveen. One example of this type of fortification alone exists in the east of Ireland; it is Raith Gall, near Tullow, Carlow.

In many respects Ireland is one of the most important countries, archaeologically, in all Europe; not the least in her military antiquities.

THE HOLLAND SUBMARINE.

MAJOR D. J. DOYLE, A.M.S.

IN the *Gaelic American* (July, 1927) Mr. John Devoy gives an extremely interesting account of the building and testing of the first submarine. The article is of further interest because of the sidelight it throws on the prison treatment meted out to the Fenians, and on the manner in which the British, through their Intelligence, sought to isolate the inventor and his supporters.

John P. Holland, the inventor of the submarine, was born at Liscannor, Co. Clare, in 1840. His educative period, while affording opportunities for the study of theoretical science, did not allow him a mechanical training. He was, however, by nature, a mechanical genius, and when ill-health compelled him to seek the American climate, the opportunities for acquiring a practical knowledge of mechanics were apparently availed of.

To continue in the words of Mr. Devoy:—"How long he was in the country before any of us met him I don't now recall, but John J. Breslin, the rescuer of James Stephens and of the Fenian soldiers in Western Australia, and I, were introduced to him at one of the receptions to the rescued men, in 1876. We found him to be exceptionally well informed on Irish affairs, strongly anti-English, and with clear and definite ideas on the proper methods of fighting England. Discussing the causes of the failure of the Fenian Movement, he told us we could 'never free Ireland on ten cents a week,' the amount of the dues paid by members of the Clan-na-Gael at that time, and by its predecessor, the Fenian Brotherhood. He insisted that the British Fleet was the great obstacle to Irish Freedom, of infinitely more importance than the army, and that it must be destroyed before we could hope for success. We readily admitted that, but asked him how it could be destroyed except by a superior fleet.

"He then told us of his plans for constructing a submarine torpedo boat, and of his difficulty in convincing men that a submersible warcraft was possible, and of obtaining the money to build one. He said: 'You gentlemen have a fund for making war on England, and you could put it to no better use than enabling me to build a submarine torpedo boat capable of approaching an English warship unseen and sending a torpedo into her hull that would sink her instantly.'

"We were startled by the proposition, but were at first inclined to think he was a visionary carried away by his enthusiasm, and that his lack of training and experience would render him incapable of the work he briefly outlined. In further interviews we found that he had a thorough knowledge of warship construction, a clear and precise way of speaking, great power of exposition. He never got nettled at doubts of the possibility of his project, kept cool and good-tempered all the time, and talked to us as a school-master would to his pupils, taking infinite pains to convince us. He finally succeeded in this, and we laid the matter individually before the other Trustees of the National Fund which had been christened the 'Skirmishing Fund' by O'Donovan Rossa, its founder, who was still one of the Trustees appointed by the Providence Convention of the Clan-na-Gael, on the motion of Colonel Ricard O'Sullivan Burke, and at which Rossa himself was a delegate. Burke had been a Captain of Engineers in the Federal Army in the Civil War, was in command of fifteen miles of earthworks in front of Petersburg, Va., when Grant was making his final move on Richmond, and was a master of physical science."

We had the greatest confidence in Burke's scientific ability, and he was strongly in favour of giving Holland's plan a trial. He admitted, as Holland himself did, that experiments would be necessary, and that it would probably require more than one before success was finally reached. But he was positive in declaring that Holland's plan was scientifically sound. His opinion was that of an expert. John

Breslin was able to give him a full explanation of it, as he had had many interviews with Holland, and understood it better than any of us.

Finally a meeting of the Trustees was held and Holland spent the better part of a day explaining his plans to them and removing their doubts of the possibility of success. Finally he convinced all of them, and the vote to give his plan a trial was unanimous. James Reynolds, of New Haven, who had great mechanical skill, was enthusiastic in his quiet way over it, and helped Holland to win over the others. John Breslin was given charge of the work and made arrangements, under Holland's instructions, with the Delamater's Iron Works, which, if I remember rightly, was on West Fourteenth Street, near the Hudson River.

The first boat built was rejected because of defective rivetting. The bad rivetting was discovered by James J. O'Kelly, then on the staff of the old *Herald*, whom I brought to Delamater's to inspect the work. His father kept a blacksmith's shop in Dublin, and in his boyhood and early manhood he had to work at the trade before he became a sculptor in the studio of his uncle, John Lawlor, in London. After less than five minutes examination he pointed out to me that the rivets were not true, and that the water was sure to ooze in. After bringing Holland to inspect it, we rejected the boat, not without some wrangling with the foreman, and the firm consented to begin the work all over again.

The second boat was rivetted all right, but the machinery inside was so placed that the weight was too much towards the stern, and in the water the prow slanted decidedly upward, but otherwise the boat was exactly according to Holland's specifications. She immersed all right, and proved the correctness of the plans, but could not perform the work intended, because of the slant.

So we had to get another built—the one which is now the subject of discussion, and she came up to Holland's highest expectations. He devoted every minute of his time to superintending her construction, and the workmen carried out his instructions to the letter. As the work on the three boats went on, new ideas came to him, and some details of his original plan were altered. The third one was larger than the second, and the second larger than the first, and the last one would have been much bigger if we had larger funds to pay the cost. He was very confident that he could build one a hundred feet long that could cross the Atlantic, go unseen into Southampton or Portsmouth Harbour, throw a petroleum shell into an English ship, and get away undiscovered.

The first tests of submersibility were made at Communipaw, N.J., and were entirely successful. She was cared for by a little Dublin man, whose name I forget, and his son was a perfect dock-rat who could remain under water for an incredibly long time. We found him renting a small dock, and we stored her there. The place was haunted almost every hour of the twenty-four by English Secret Service men and detectives from private agencies, who were all Irish and pretended sympathy with the project in order to elicit information. We had nothing to conceal, as we knew the boat could not be built in entire secrecy. The secrecy would only be necessary when we came to use her, and that day was a long way off, as we could only begin operations when the Home Organization was ready for a fight and we had a few more boats. One of the detectives was a cousin of a prominent Chicago Nationalist, and he was the worst of the lot, with an apparently frank manner and a face that gave no indication of his crookedness. But he could give no explanation of his reason for hanging round so constantly, and his pretence that it was honest interest in the work was knocked out by the fact that he was doing no other work.

From Communipaw we moved her to Bayridge, L.I. (now part of the city), where the water was more favourable, and Holland gave exhibitions of her capabilities, always going down in her himself to show his confidence in his invention. His chief difficulty was with the oil engine, which was patented by a friend of his. As the newspapers gave great publicity to the boat and its inventor, the patentee

of the oil motor began to make exorbitant demands and to threaten legal proceedings. The motor itself also gave trouble, as the spray clogged and impeded its workings. The oil also created poisonous fumes which necessitated constant ventilation, which would have been a serious drawback on an extended voyage. Holland believed that an electric motor would be the ideal thing and would eventually supplant steam. He was anxious to give the boat a longer voyage than she could have in New York Harbour, but with the oil motor that was not possible."

Having detailed the extraneous circumstances that negated the use of the Holland boat for the purpose for which it was built, the writer proceeds:—"we had her towed up through the Sound to New Haven, where James Reynolds, one of the Trustees, kept a brass foundry, and she was stored and cared for there for many years. When Reynolds died, his son-in-law, Pat O'Connor, former Fenian "Centre" of Galway, took care of her, and, on his death, Captain Larry O'Brien, of the Ninth Connecticut Volunteers, in the Civil War, and who made a sensational escape from Clonmel Jail in 1867, took charge of the boat, and it remained in his care until 1916, when we had her taken to New York for exhibition at the Bazaar to raise money for the Relief of the Families of the Victims of England's Reign of Terror in Ireland. We sent David Callanan and Thomas P. Tuite to New Haven to take charge of the removal. It was a difficult task. She is nineteen tons in weight, and had to be got down to a small stream close to Captain O'Brien's yard, and it was intended to bring her down the stream to the Sound and tow her to New York. That was found to be impracticable, owing to an accumulation of sand and mud on the bank of the stream, so she had to be loaded on a truck and taken to the railroad, where she was put on a freight train and brought to New York. The job of getting the boat on a truck to Madison Square Garden, and into it, was also hard, but she eventually reached there, and was put in an enclosed corner of the building close to Fourth Avenue. Here she was put on exhibition, and an entrance fee charged to visitors. She was the big feature of the Bazaar and realised a goodly sum for the Relief Fund."

Mr. Devoy then describes the subsequent history of the vessel and the rivalry shown by various individuals and societies to secure it as a relic of sentimental or historical value, and adds apropos of the circumstances under which it was constructed:—"Few people at that time could vision the under-sea boat as Holland built it in his mind and drew it on his draughting-board. The science of sub-sea construction and operation as we have it to-day had not yet begun. Because of changed conditions the splendid works of Fulton and Ericsson could be of little help to him. No boat of this type had heretofore been attempted. He blazed and built along lines so correct that though many and great improvements have been made in under-sea activities since Hollands' time, his basic ideas and plans still hold as he then laid them down.

The art of making a perfectly air and water-tight and sinkable boat was not then well understood. Indeed, engineers and mechanics had to be paid bonuses to hold them to the work at all. Very few people had the courage to help fasten down the hatch on themselves and then submerge with the boat. Holland always went down with her.

Compressed air played a considerable part in the operations of the boat. It had to be compressed within the boat itself, and, at times, when she was under water. The breathing of the submerged crew, the combustion of the oil engine, and the torpedo's discharge from the boat's nose, were all parts of the compressed air system.

About that time great improvements were going on to eliminate the horse from street car traffic. Steam, compressed air, Ericsson's hot air engine, electricity, trolley, cable, and third rail were being tried. Henry Ford was working on his horseless buggy. Each of these several systems had its advocates and doubters, but none of them were helpful to Holland.

The boat had its greatest need for fresh air when it was hermetically sealed and under water. The oil engine combustion would in a short time destroy the breathing air content of the shell, and it may be here that Holland showed his greatest genius in co-ordinating the several parts of his apparatus so that all of them worked properly, and the crew lived through.

As an under-sea motive power, steam could not be considered. The gas engine had not yet arrived, neither had the storage battery. John Ericsson, who built the Monitor during our Civil War in 1862, had a good hot air engine, but its use was barred because of the fouling of the air for the crew. Here again Holland showed his genius. He could not find anything published that was helpful to him in the matter of oil burning. It was a trade secret. He corresponded with all the authorities. A mutual friend conferred with Dr. H. C. Land, in Detroit, the grandfather of our Charles Lindbergh, who was at that time probably our greatest oil-burning authority, through his use of it in his pioneer work in the dental porcelain field. Holland's well-balanced, scientific mind enabled him to draw on all the best things of his day, and thus he gave us the first practical safe working, under-sea boat, that sank and came up again, and did all of the best things that such boats can do to-day. The marvel is that he did so much under the ever present handicap of shortness of funds."

Speaking from the experience of a long life full of observations of international affairs, Mr. Devoy deals with the "might have beens" in the balance of maritime power, had Holland's idea been accepted by the Governments to whom it was offered in the early stages.

The inventor died in August, 1914, and is buried in Paterson, N.J. On both scientific and patriotic grounds he is well deserving of a place in the national memory.

THE FIRING OF BLANK AMMUNITION FROM THE LEWIS GUN.

By COMMANDANT D. J. STAPLETON.

THE firing of blank ammunition from the Lewis machine-gun is now an accomplished fact. A short sketch of the investigations which led up to the discovery may be of interest to many readers—Irish and others.

During the period when I was in charge of the Explosives Factory at Tallaght, in 1923, under Major J. Dunne, the preliminary experiments in different types of blank ammunition began. The object in view was to secure a cartridge charged in such a manner that the pressure exerted would be greatly in excess of that offered by the average blank.

Failure after failure was registered *ad nauseam*, and it was not until almost two years later that success was achieved. At this time I had been transferred to Islandbridge Barracks upon the disbandment of the Chemical Department. Very few facilities, or indeed, occasions were now available, and the experiments had to be conducted privately. It was in my own laboratory that I finally struck upon the idea which helped me to produce the cartridge I wanted.

I at once told Lieut. W. Doyle, Assist. Chief Armourer, Supply and Ordnance Sub-Department, of my discovery, describing minutely the composition of the cartridge and demonstrating its absolute safety by firing at a sheet of paper within six feet from muzzle of gun. I also pointed out that a pressure of nearly seven tons to the square inch was developed during the explosion. "If that is the case," he replied, "we should have no difficulty in firing that blank from the Lewis."

To all of us who are familiar with the latter, this statement, in itself, was astonishing. It was a well-known fact that considerable sums of money had been expended by other Governments in research work, etc., in order to obtain this result, and we had been taught to believe that the firing of blank from the Lewis was impossible. The idea that there was a sporting chance of doing so was exciting.

Days were spent by both of us examining all possible and practical means of trapping the gases. At last Lieut. Doyle came in one morning and told me that on the previous night he had worked out a trap which, he believed, would "do the trick." He was, indeed, as good as his word, for upon the very first trial the gun worked away for twenty rounds.

Needless to say, we were in a state of jubilant excitement, as by far the biggest difficulty had been surmounted, and there now remained only the task of feeding the blank cartridge evenly into the feed-arm. This too, Lieut. Doyle successfully accomplished, and to-day both the ammunition and the attachments are the subjects of absolute patent rights.

It need hardly be pointed out that the ammunition and attachments work in sympathy with each other. With the diagrams attached explanations are submitted:—

Fig. 1. The Gas-trap, the most important of the attachments is fitted to the gun between the muzzle at A and barrel mouth-piece at B. C is the plano-concave chamber in which final disintegration of the patent wad takes place, and where the gases are temporarily checked, causing the necessary increased pressure to work the backward action. The size and shape of this chamber has been the re-

sult of numerous experiments. bl. is the passage through which the excess gas and disintegrated wad are ejected upon the forward action of the gun, and no deposit of any kind being left, the chamber is clear for the next charge.

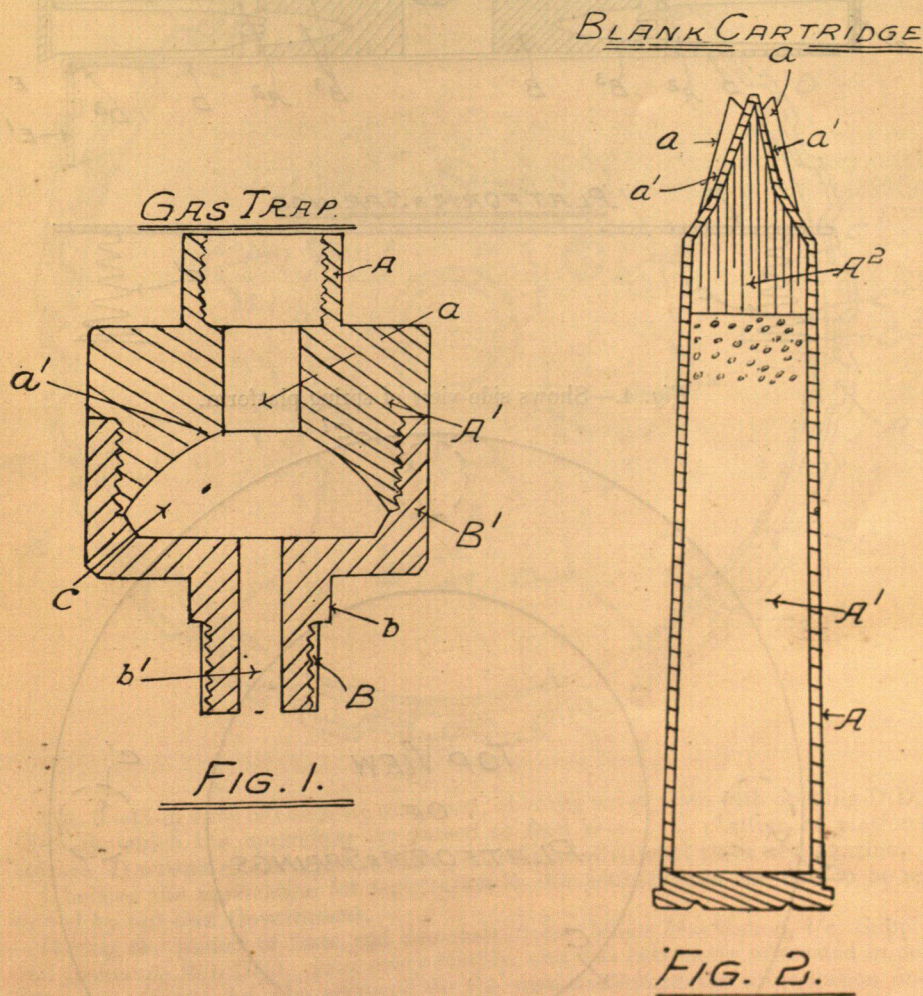


Fig. 2. Cross Section of Blank Cartridge.—A the charge of ballistite. A2 the wad of cellulose, impregnated with a special mixture of hard and soft paraffins; melting point above 100°, and which is expelled through the gas-trap.

Fig. 3. Sectional View of Magazine, showing the blank cartridges in position on the platform C (springs compressed) which compensates for the bullet and feeds the cartridge evenly on to the feed arm. E is a spring catch which prevents the cartridges from dropping out when magazine is inverted, and stretches across opening, D.D., Fig. 7.

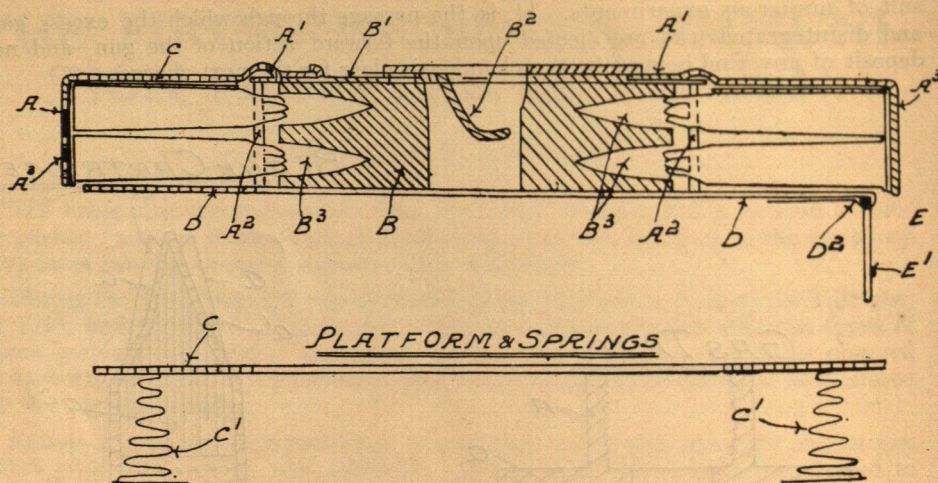


Fig. 4.—Shows side view of spring platform.

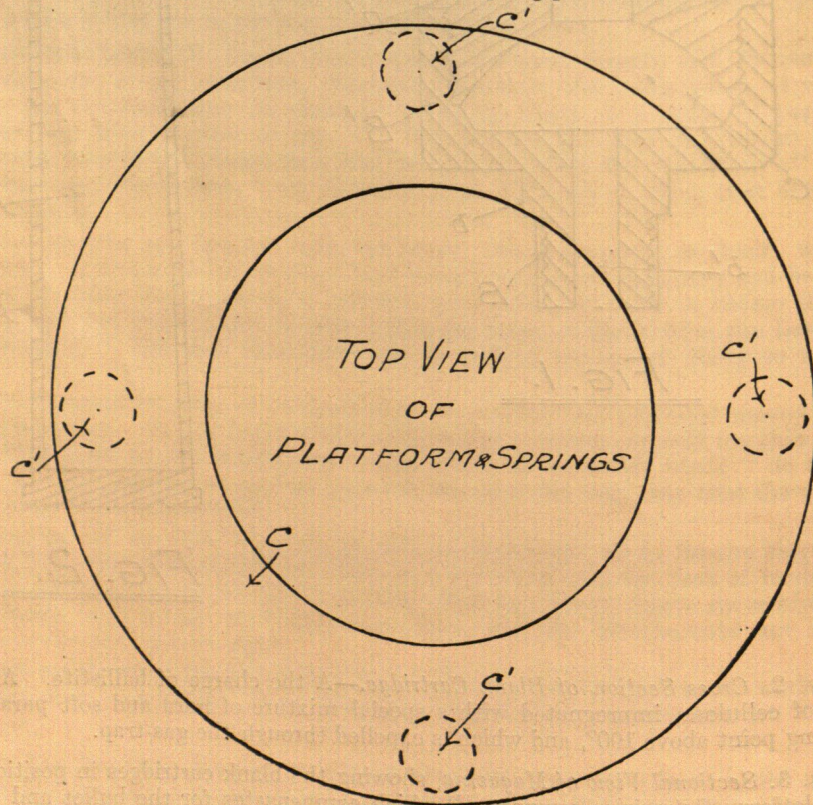


Fig. 5.—Top view of same showing how it can fit down into the magazine around the centre block.

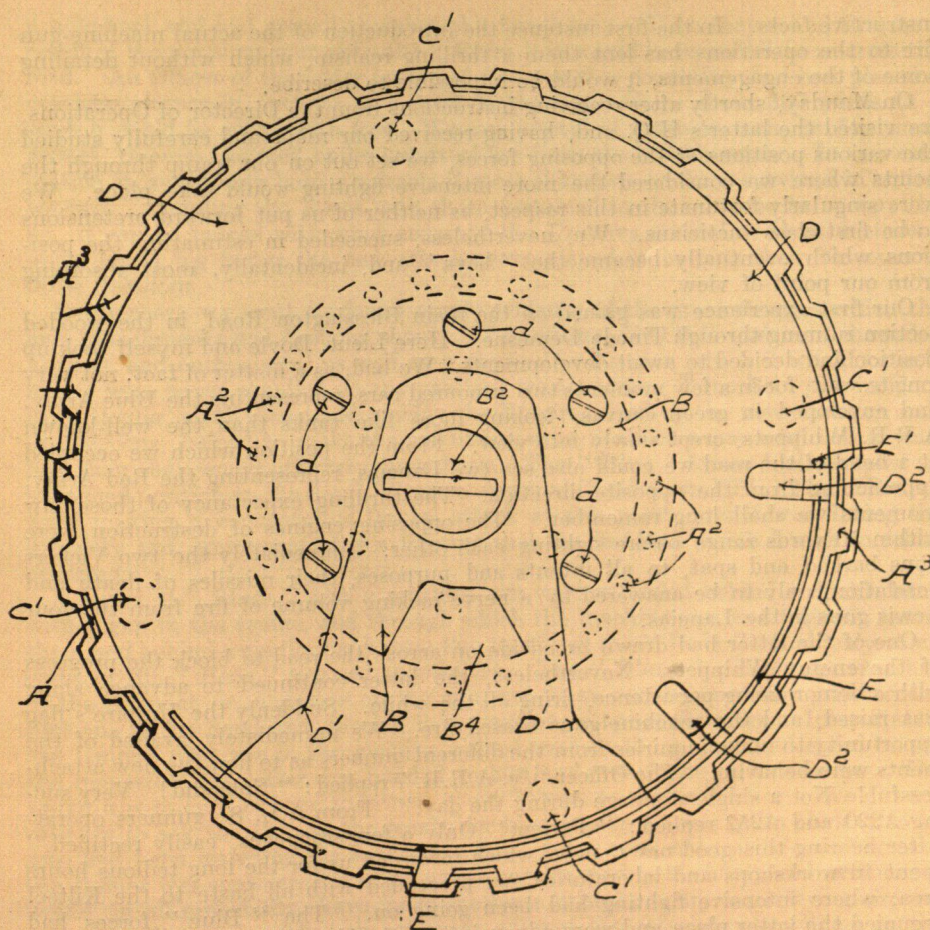


Fig. 6.—Top view of complete magazine, showing cover plate with opening D.D., through which the cartridges are passed to feed arm. C position of platform springs, D screws retaining cover plate; A2 original divisional studs of magazine.

I believe the application for registration in this country was the first to be received by our own Government.

During the period of tests and demonstrations, Major MacMahon, i/c. Supply and Ordnance Sub-Dept., gave every facility, and was extremely interested in our progress. It was he who arranged for the manufacture of the ammunition and attachments, and their subsequent issue for practical trials during the manoeuvres. He also obtained permission for Lieut. Doyle and myself to attend at the latter, and specially report the effect produced. I attach herewith report as submitted, asking indulgence for its rather subjective style in view of the circumstances under which it was prepared:—

At 08.00 hrs. on Monday, September 20th, Lieut. W. Doyle and I reported to D.Q.M.G. at Tinode Camp. The purpose of our visit was to report on the effect at the manoeuvres of the recently discovered attachments and ammunition for machine guns, and also to note for future development any ideas which, as a result of our experiences, might suggest themselves.

The application of the main purpose brings to light very many interesting and

instructive facts. In the first instance the introduction of the actual machine-gun fire to the operations has lent them a thrilling realism, which without detailing some of the engagements, it would be impossible to describe.

On Monday, shortly after receiving instructions from the Director of Operations, we visited the latter's H.Q. and, having received our maps and carefully studied the various positions of the opposing forces, we set out on our tramp through the points where we considered the more intensive fighting would take place. We were singularly fortunate in this respect, as neither of us put forward pretensions to be first-class tacticians. We, nevertheless, succeeded in estimating the positions which eventually became the "keys" and, incidentally, most absorbing from our point of view.

Our first experience was gained on the main Blessington Road, in the wooded section running through Tinode Demesne. Here Lieut. Doyle and myself took up position and decided to await developments. We had, as a matter of fact, not very long to wait, for in a few moments two armoured cars, representing the Blue Army, and enveloped in green canvas, looking more like tanks than the well-known A.R.R. Whippets, crept slowly into view. From the position which we occupied at a bend of the road we could also see two Lancias, representing the Red Army, approaching from the opposite direction. The thrilling expectancy of those few moments we shall long remember. The opposing engines of destruction were within 50 yards range before sighting each other. Immediately the two Vickers guns barked and spat, to all intents and purposes, their missiles of death and desolation, only to be answered by a nerve-racking volume of fire from the four Lewis guns in the Lancias.

One of the latter had drawn broadside on across the road to block the progress of the enemy Whippets. Nevertheless, the latter continued to advance along with a demoralising persistence, firing all the while. Suddenly the Umpire's flag was raised, and the machine-guns ceased fire. We immediately availed of the opportunity to make inquiries from the different gunners as to how the new attachments were behaving. The Officer, i/c A.R.R. 7 replied: "Splendid! Very successful! Not a single stoppage during the day." From A.L. 8., gunners operating A220 and A252 replied: "Perfect! Only a few stoppages, easily rectified." After hearing this good news, news which rewarded us for the long tedious hours spent in workshops and laboratories, we proceeded with all haste to the Kilteel area, where intensive fighting had been going on. The "Blue" forces had occupied the latter place and were advancing on Cupidstown Hill. The "Reds" were counter-attacking on "Blues" right flank, and some desperate fighting was in progress around Whitefort farmhouse. The rattle of machine-guns could be heard all round and, judging by the continuous volume of fire which was being maintained, it was plainly evident that the gunners were meeting with very little trouble in the manipulation of the attachments. One gun in particular which we had under observation, and which was doing big work for the "Blues," suddenly ceased fire. The gunner immediately dismantled it and found a broken extractor; this being replaced, the gun was again in action in a few moments.

It was wonderful to watch the enthusiasm with which these boys entered into the spirit of the fighting in this area. There was an old pit close to the farmhouse, the occupation of which seemed to be the objective of two opposing Companies; the Umpires were moving quickly from position to position, noting, with tremendous keenness for detail, the various manoeuvres carried out by the different Company Officers, and when, some minutes later, firing ceased and the Umpires decided that the "Reds" had captured the pit with the loss of three squads, it seemed to us, who were absolutely impartial, that no fairer decision could have been given. In support of this, the following will be of interest: "A" Company of the "Blues" had been advancing along the Kilteel-Tinode Road and had almost reached Whitefort House. The "Reds" had already crossed the same road about

a mile back and had actually reached this farmhouse. Here they found that as a result of the positions gained by the "Blues" it would be essential to re-cross the road. An Officer of the latter force had foreseen this possibility and had placed a machine-gunner in position at a bend in the road where about 300 yards of a stretch could be swept with fire. We saw a total of nineteen men, in five small groups, re-cross the road under bursts of fire from the machine-gun. In our estimation it would have been a miracle if more than two or three survived in actual warfare. Coupling the losses with those sustained in the advance to occupy the pit, it can be judged with what accuracy the Umpires arrived at their decisions, and what a big factor the new attachments played in helping them to come to those decisions.

Everywhere we went we found ample evidence of the great changes which the new attachments had brought about. The Officers, N.C.O.'s and men showed a keenness and enthusiasm, as well as a physical endurance which it would be safe to say were never equalled on any previous manoeuvres. I recollect one incident in particular which shows how quickly the Umpires sized-up the new situation and, in decisions, helped to make the conditions even more on a par with actual warfare than they would otherwise have been. The "Blue" forces had occupied an advanced position on the South-Western slopes of Cupidstown Hill. The "Reds" were making a concentrated frontal attack at this point, and it was during the intensity and excitement of this fighting that the incident which I wish to relate occurred.

A squad of "Blues" with a machine-gun were extended behind a double bank with a gap in the centre, and through which the machine-gun was trained; facing them and behind a similar bank were two squads of the "Reds." Suddenly about eight of the "Reds" exposed themselves. The "Blues" machine-gunner had at the moment no magazine on the gun, but in an excited condition grabbed the first one at his hand and, placing it in position, attempted to fire. Immediately the Umpire who was in the vicinity walked over to the gunner and asked to see the magazine, the latter was handed to him and was found to be empty. The squad was at once ordered to retreat about 70 yds. to the next fence. We did not attempt to ask the Umpire the reason for his decision; it was quite obvious to us who had been watching the incident. It is, I am sure, natural to conclude that the gunner was considered to be on active service, and in his hurry and excitement would, in all probability, have made the same mistake under more trying circumstances. This shows what an immense adjunct the attachments will be in the training of machine-gunners during manoeuvres in the future.

TO SUBSCRIBERS.

To ensure prompt delivery of each issue of AN T-ÓGLACH you are requested to notify any change of address to:—The Manager, AN T-ÓGLACH, Department of Defence, Parkgate, Dublin.

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

IMPRESSIONS OF POLAND.

By AN MAOR MAC CIONAOTHA.

FOR the third time Ireland has been represented at the biennial International Congress of Military Medicine and Pharmacy. The venue on this occasion was Warsaw (May-June, 1927). Poland did the honours in a magnificent way, and spared neither trouble nor expense in entertaining the representatives of about 40 nations participating in the function. The Irish delegates had the pleasant experience of finding themselves the recipients of special attention not only from the Army Authorities but from the members of the civilian community with whom they were brought in contact. In this connection it is interesting to relate that at a civic reception in the City Hall, Warsaw, the Irish tri-colour figured in the mural decorations. As in Rome and Paris on previous occasions, the Irish Army, as the youngest member of the Congress, was a source of special interest to the other nations, and many were the inquiries addressed to us with reference to our Army and country, while the expressions of good will for the progress of both Army and people were many and profuse. There is a remarkable similarity between Poland and Ireland in the history and temperament of the two nations, and the mutual attraction that sprang up between Polish hosts and Irish guests is consequently not surprising. Both countries have a past on which they look back with pride—the outstanding feature in both being the tenacity with which the population has clung to ideals of liberty and nationality.

Poland was conquered not by one, but by three nations, and experienced the horrors of partition in its worst form. Since its re-constitution it has known the crowning horror of civil war. In spite of subjugation and dismemberment, Poland has clung to its own language and customs. It acquired the languages of its conquerors but it did not give up its own—which is to-day a virile tongue both as a literary exponent and as a vehicle of scientific expression. It was certainly an example to Irish Officers to see Polish Officers enthusiastic in dancing their native dances and to hear them use their own language as a routine. Needless to add, they were quite prepared to use the language of some of their quondam conquerors when occasion arose in their intercourse with their guests.

Poland is rich in monuments to its heroes—and public memory in regard to them is not allowed to die; their history is well written in marble and stone and earthen mound. Wherever you turn you meet artistic mementoes of the great men of its past—and Jean Sobieski, who broke the Turk at Vienna, is as vivid a personality to the mind of the everyday Pole as Brian of Clontarf is to us, whilst Kosciuszko and the modern liberators are household words.

About 75 per cent. of the population is Catholic in communion with Rome (*i.e.*, including members of the Uniate Greek Church). Many of the churches are in themselves magnificent examples of architectural art, and some are enhanced further by the fact that they enshrine priceless art-treasures and contain the tombs of many illustrious dead—silent witnesses of the days of Polish monarchical splendour. To see a Polish congregation at prayer recalls in a manner the intimacy of an Italian congregation with things divine. Though overwhelmingly Catholic, Poland has not allowed this consideration to influence the selection of suitable occupants for positions of control and responsibility in its public life.

Poland, in its charity, formerly gave sanctuary to the Jews when persecution was the lot of the Hebrew elsewhere. They now amount to more than one-tenth of the total population and are not regarded by the rest of the community in the

light of a totally unmixed blessing. There is nothing of the wandering Jew in his Polish representative; the latter has apparently settled down, and the ghabardine in its modern form, and other distinctive marks of Jewish dress are fixed features of the landscape even in remote villages.

As might be expected from their geographical position, the Poles are a nation of horsemen, and the display of horsemanship by numerous Officers of the Polish Army at the International Horseshow in Warsaw will not likely be forgotten by strangers privileged to witness it—certainly not by Irishmen.

Arising out of their geographical position, there is one marked point of dissimilarity between Poland and Ireland, and the Poles themselves insisted very strongly on this point. We in the West have a sea-frontier, while Poland—the key of the East—has an enormous land frontier. In Poland, perhaps more than in any other country, the need for a large conscript Army is consequently apparent.

Subsequent to the Congress proper, a number of excursions were arranged to



Colonel T. F. Higgins, Director of Army Medical Services; Captain Hieronym K. Idzikowski (Liaison Officer) and Major T. McKinney, Army Medical Services, at Inspection Générale de l'Armée, Warsaw.

show the industrial and tourist provinces with the Summer and Winter resorts of the latter. A big effort is being made at the moment to bring the merits of the country as a tourist-resort before the world. Many Polish refugees during the prolonged struggle for independence found a home in America, while economic conditions, deriving in the main from the political crises, drove countless others to seek a living there. This close association with the U.S.A. has resulted in the Government Department of Public Works publishing guide-books in English for the information of American tourists.

For Irish Officers who have exhausted the scenery and holiday interests of our own country, Poland with its history and traditions, its Celtic type of character (even in its defects), its struggle with the problems that beset a recently re-constituted State, will afford a stimulus and an inspiration. A little French or German, and occasionally a little English, will solve the language problem—the Poles, like the inhabitants of many continental countries, being good linguists, whilst as a result of prolonged intercourse with U.S.A., mentioned above, there are many individuals scattered throughout the country who speak English fluently. Moreover, the cost of living in Poland is low—not an unimportant consideration for the tourist.

T. MacC.

THE CASE FOR ARMY PENSIONS

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

I N dealing with the subject of pensions for Army Service, I confine my remarks entirely to Commissioned ranks. Up to the present Non-Commissioned Officers and Men have served on short term contracts, whereas Commissioned ranks have not contracted on this basis.

The first question that arises is whether State services should or should not be organised on a pensionable basis. Seeing that all other State services are pensionable services, one must conclude that after deliberate investigation—policy, precedent and justice dictated State pensions for State Service.

The next question which requires consideration is why an exception has so far been made with regard to service in the Army. The Civil Service, the Police, the Post Office, and all other State Services have been placed on a pensionable basis, and the Army has been neglected. What is the explanation?

- (1) Is the Army a junior Service to the above-mentioned organisations?
- (2) Is the Army less a whole-time Service than these others?
- (3) Have the services rendered by the Army to the State been less worthy of consideration than the services of other departments?

The facts are briefly as follows:—Following on the acceptance of the Anglo-Irish Treaty by the elected representatives of the people of Ireland, and the consequent establishment of an Irish Government, the circumstances were such that the first Service necessarily brought into being was the Army. Later an Irish Police Force was organised and recruited to a great extent from the Army. There were in existence at the time a skeleton Civil Service, a small Postal Service, and an entirely inadequate Judicial Service. These latter were taken over from the British, and the financial position of the personnel on resignation or completion of service was safeguarded by the British. Subsequently, these Services were recruited up to required strength by the Irish Government, and, generally speaking, they were re-organized to such an extent that they may be regarded as new Services.

The above statement of fact points out clearly that the Army, as an Irish Service, is not junior to any existing Irish Service, and this is accentuated by the fact that the Army had its roots in the Irish Volunteers.

The second point that arises is whether the Army is less a whole-time Service than other State Services. In all other Services an individual can resign at any time by giving due notice, and in most other services the hours of work are so defined that if a member is called on to do extra time he receives extra pay. An Army Officer cannot resign at will, as the State has power to hold him in the Service. Moreover, an Army Officer may be called for duty night or day, may be confined to barracks or to a particular area indefinitely, and has no choice as to particular type of work or as to location. It is evident, therefore, that far from being less a whole-time Service than others, the Army is, in the fullest sense of the word the only whole-time Service.

Now the third point as to whether the services rendered by the Army are less worthy of consideration than that of other branches may be safely left for judgment to any tribunal. Some may argue that but for the services and the sacrifices of the Army none of the other Services could have been developed, and that the other Services owe their existence to the Army.

None of the points developed above can explain the present position of the Military Service.

It is necessary, therefore, to endeavour to discover any other arguments which

might weigh against the introduction of a pension scheme for Officers. There are two arguments which one hears used:—

(1) The cost of pensions to a poor State.

(2) The fact that some people think that an Army may be unnecessary at some future date—not specified.

Number (1) is an argument which must receive serious consideration from every one interested in the State's finances, but it is an argument equally sound when used against any or every pension scheme. It is as sound when used against pensions for the Judiciary, the Civil Service, the Postal Service, or the Police, as it is when used against the Army. Doubtless it received full and careful consideration before pensions were sanctioned for each of these Services; yet it was overruled, and it was decided that justice and economy dictated the pensionable Service. Should not the same policy apply to the Army? Is the State financially in a worse position than when these pensions were allowed by the Irish Government? In reply to this question I will quote the highest legislative and financial authority in the Irish Government. Speaking in the Dáil on July 6th, 1927, President Cosgrave stated: "The position of the country financially is as sound as it was this time last year, and as it was the year before and ten years ago." Everyone will accept the President's word that the financial position is as sound when pensions were issued to other services.

Now the second argument, that at some date an Army may be unnecessary, is scarcely an argument against pensions rendered. A pensions scheme merely lays down what an individual is entitled to after so many years' service. If a Service is disbanded, the members get the financial equivalent of the number of years served. In my opinion this argument rather strengthens the claim for a pension scheme. Cannot a Pension Act be passed defining the proportion of annual pay which will be granted as pension for each year of service? Would not such an Act facilitate reduction in strength or disbandment?

I suggest, therefore, that after a careful review of all the circumstances any impartial observer will agree that the Military Officer should be earning a pension, as is the case with all other servants of the State. Moreover, I believe that a continuance of the present position will not produce efficiency. The success and progress of an Army depends on individual discipline and efficiency. Perfect discipline and efficiency are incompatible with instability and restlessness. Genuine efficiency cannot be expected in an Army where the individuals each and all have their eyes fixed on the civilian horizon for a civilian appointment which would mean stability, nor will the prospect of a pensionless future attract the very best type of young men into the Service as Cadets.

SLÁINTEACÁS SAN ARM.

AN MAOR TOMÁS MAC CIONAÓTA, DO SCRÍOB.

Greas camnte—ag tabairt comhairle a leasa do saighriúirib an Céato Cاتا (An Cat Gaebéalac) ar dteacht i mbl' Á. Cliaic, dóib—annso tíos.

Bionn an tÓglác slán iomlán ar dteacht san Arm dó; déantar gac ruo is feoir cum a sláinte do cosaint agus é 'na saighriúir. Solátruigítear deas-biaó, deas-aer, deas-eadaic (roir culaic coisic, pó-éirde agus bróga) dó—agus tá o'fíacaib air riaghláca sláinte do leanamaint. Tugtar comhairle agus riaghláca um sláinte do'n óglác ar maite leis féin—ní cum buardeartha agus trioblóirde do cur air. Caróe an riagail um sláinte is mó le ráó? Is feoir freagra do tabairt ar an gceist úo i n-aon focal amáin—Glaine. Orduigítear do'n óglác agus moltar dó glaine do cleaictaó—roir glaine cuirp agus glaine áite. Céard is bun agus brí leis an gcomhairle so? Déanann an glaine cose do cur roim ré ar an ngalar.)

Ar dtús cad is galruaó ann! Bíteoga urcóirdeaca a téigeann asteac 'sa corp agus a siolruigeann aicíre ann. Ruó beó ana-beag 'seao bíteós. Ní feoir a feiscint gan miondracán lán-éirdeactamail. Tá gac aon áit lán de bíteogaib, beag nac. Cuir i gcás, ní'l áic aon áit amáin i seomra-comnuirde nac bfuilro le pagáil imní—.i. an teine. Marbhuigítear leis an teas iao. Ní feoir an méar a cur ar ruó ar bí gan bíteoga a tógáil agus a tabairt. Tá an cuo is mó aca póganca go leór; ní'l áic tuarim le caogaó sahas aca atá urcóirdeac siolruigeann siao so galar má leigítear asteac 'sa corp iao. Tá dlúth-baint ag sal le bíteogaib urcóirdeaca. Sin é pá ndear an comhairle um glaine a tugtar do'n óglác.

Má tá sal scaipite timéall—(salacur cuirp nó brúscar bíó jml)—tá slige beataó ag na bíteogaib urcóirdeaca. Téigeann oifigeac déanta cigireacta ar buile dearg nuair do éirdeas sé é mar is maic an fios atá aige gur ab abúar contabairte atá ann agus go mbéir cuo des na fearaib ag eirge breóirde 'da deascaib.

Cur i gcás nac bfuil sal le feiscint, go bfuil gac aon ruó roir troscán agus treallam cata sciomarta go glan agus deisighe 'na áit féin—áic motuigítear droc-bolaó nó tá móran cuileós le feiscint. Annsm téigeann an t-oifigeac cigireacta ar long sail i n-áit éigin—bíó camra tacluighe nó gropaó bréanac nó carn bruscair is cionntac leis. Mar a mbionn droc-bolaó nó móran cuileós bíonn salacur, morgaó, agus bréantas le pagáil preisin,—agus bíonn bíteoga galair i n-aomfeact leó. Réirigítear an camra nó gropaó, scuabtar i gcéin an bruscair—as go brát leis na cuileogaib agus leis an droc-bolaó.

Abúar contabarta speisialta atá ina na cuileogaib. Feintear i sal iao má tá sé le pagáil amuig. Tagar siao ó salacur cuirp .i. camraic briste, carn aoiligh, múnloc nó fuailteac i bpoigseact dó. Is gnát do'n uisce i mbun-sroic abann ar reasc nó ar úruim sléibe a beic glan. Níos sia ar comctrom talman mar a mbionn cuireadóirdeact, ainmnicige, tige sráto-bailte agus bailte móra ar a brúacaib bruailligítear é. Bionn na bíteoga galair dlúithe leis an t-sal na aóbaú neam-glaine atá ar érocaó 'san uisce. Má sioclúigítear an t-uisce tré éadaic nó sítleán speisialta baintear amac an sal agus an cuo is mó des na

biteógaib. Is fearr an parasbarr a marbhad le cimiceadaib nó le teas. Má's doig leat nac bfuil uisce uige polláin—beirbhig é. Loiceann an teas an t-ábhar galair.

Is olc an maíse do dhuine cóir uisce uige do truailliúgadh le salaçar o'don-toisc—ádt is minic a tuiteas a leitéro so amad.

Glaine an Cuirp :—Ní mór an corp go léir o'fórtasadh uair 'sa t-seachtmáin ar a láigeas. Má déantar paillege air so bailigítear allus tiormuigíte agus luaitreadh iml ar an gceas agus seintear galar tocais, etc. Gan tráct ar gránvact an deallraim so—is iad na míola eneis pá ntear pláig uatbásac, an galar dub. Bíonn duine seascair compórtad roir corp agus aigne ar n-a fórtasadh agus fód-éadac úr a cur uime. Tá an t-uisce agus an géalainnact i bpat níos fearr ná coisúirde doctúra.

Seilúgadh :—Droc-béas contaibartac gránva 'sead é an t-seile a cáiteam amad. Bíonn sí lán de biteógaib i gcomhúirde. Nuair a tiormuigítear i séirítear na biteóga 'sa luaitreadh leis an ngeas agus tarraingtear astead i sgamógaib doime eile iad le linn análuigíte. Ní maí an ruo do sláinte biteóga an duine eile do tarraingt astead sa cléib. Cur i gcás go bfuil eitinn ar oíar. Má bíonn sé as cáiteam seile tógparó doime eile an galar mar a luaitéar suas. Galar uatbásac 'sead an eitinn ; is gnát gan leigeas a beit uirtí ádt leigeas an báis. (Is minic a bíos an eitinn ar buaib agus uaireannta tá na biteóga le faigil i mbáinne bó. Is fearr, freisim, biteóga buair, fiabrais builg agus buinnige veirge o'faigil i mbáinne má leigeann duine crúirde na mbó bualtrae 'sa t-soiteac. Má's doig leat nac bfuil an báinne slán polláin, beirbhig e).

Aeirúgadh :—Ní poláir deas-aer a soláctar ar an óglac i mbeairric iml. Má téigeann duine astead o'n aer amuis ba cóir gan veirpigeact a mótuagadh 'san aer i seomra (leasmuic de'n teasamlact). Cum an aer astig a coiméad glan agus úr ní mór a aduadcaint gan tarrac aer do cur ar siubál. Is iomva an safas gaotaire atá ann ádt is leór poll an deataig cum gaotruigíte i seomra comhúirde, agus an fuinneóg ar foscailt i seomra covalta. Ba ceart na fuinneóga a beit ar foscailt ceitre órolaig as an mbárr i seomra leabair de lo agus o'oirde.

Tá an deas-aer i bpat níos fearr ná orta doctúra.

Is fearr cosc a cur ar galar roim ré 'ná a beit as déanam tarracta ar a leigeas. Uaireannta baintear ferom as biteógaib cum an cuirp a neartuagadh i n-agaíó aicíve. Cuirtear na milliúin biteóg marb (biteóg-lact a tugtar air so) astead 'sa' corp le scriórdán cum cosca a cur roim ré ar fiabrais builg. A fearact sin gearrtar an bolgac ar bunóic i otreó nac mbearparó an galar so uirtí.

Má bí doimeac i gcuirdeactam duine go rus galar togbálac air (galar te cur i gcás) tá sé air panamant i n-ait pé leit agus gan dul iscorosa go ceann tamallin —le n-eagla go n-aibeocad an galar ann. Is fíor-riac-tanac gan na geasa so a brisead.

Péac a cúramaisge a deimeas an táit-liaig agus a luic conganca iad péim o'ull-muagadh i gcóir sgian-leigis (nó oibriú) nigítear a láma i n-uisce do beirbhigead roim ré ; cuirtear láinne caoutchouc (beirbhigíte roim ré) orta. Beirbhigítear na h-uirléise. Cuirtear an t-otar pé trom-néal covalta ; nigítear a cneas agus doctruigítear le iud (.i. brí ceilpe) nó neam-galarán eile é. Déantar é so go léir i otreó nac n-ealócad biteóga i gcorp an oíair.

Scriobtar i n-Aiteantaib De 'Ná déan orús,' ádt is minic doeir an droc-compánac. 'Is dual do'n t-saigriúir an spórt do cleactad.' Mo léan gearr an buacail boct o'eisteas leis an droc-comairle agus a déanfas beart dá réir. Tá saot-oruise agus galair do-leigiste eile, tead na ngealt, agus an roilg roim ré i noán do agus dá shioct agus do shioct a sleacta. Ní glaine iomlán go oí glaine cróirde.

THE ARMY JUMPING TEAM.

By MAJOR L. HOOLAN, Director Transport.

IN considering the part played by the Army Jumping Team, at Ballsbridge, Olympia and Lucerne, one must not lose sight of the circumstances under which the team was got together, and of the short time it has been in existence.

About April of last year it was decided that, as the Royal Dublin Society had made arrangements for International Military Jumping Competitions at their Show in August, a team representing the Irish Army should compete. The first horse of a team of six was purchased during the first week of May, and the last about fourteen days prior to the Show. As horses were purchased they were entered for and competed in several provincial Shows, a procedure which helped to advance the training of the horses, and gave experience to the riders. When the time for the International Competitions arrived it was felt that if the Irish team made a reasonably good display it would be the most that could be expected. Their own inexperience and the fact that they were competing against Armies that had years of training in Military Horse Jumping, precluded more ambitious expectations. To the surprise of most people, the Irish team secured second and fourth prizes in the first Competition, and second in the Agha Khan Cup. The immediate effect of this was that all the provincial Show Committees issued invitations to the team; several were accepted, and prizes were won at each. Such Show courses comprise banks, stone-wall, water, hedge, and gate jumps.

About January of this year it was decided to train for the International Competitions at Olympia, and timber fences were erected in the riding school at McKee Barracks, on the Olympia plan. The Irish team was thus tackling an entirely new type of jumping, a type which I would venture to say had never been seen or practised in Ireland before. This was long and tedious work and required a good deal of patience on the part of the rider, and good temper on the part of the horse. The training was carried on up to June (when the team proceeded to Olympia), and considerable progress was made, but the riders were handicapped by the fact that they had never seen the competitions at Olympia, and that the riding school at McKee Barracks was too small to serve as a successful imitation of the Olympia enclosure.

When the team had competed in their first Competition at Olympia they at once realised two things:—First, that the type of horse suitable for the Irish Show courses was most unsuitable for Olympia, and *vice versa* (the big-striding horse trained to jump Irish banks at "a fair hunting pace," finding it difficult to negotiate timber fences of varying heights and at different angles without knocking a chip); secondly, they were competing with a team of four horses against other Armies with numbers of horses varying from ten to fifty from which to select. On account of the numbers competing, the standard of jumping was naturally very high, and no horse obtained a prize without doing a clear round. The best round of the Irish team was done by "Glasslough"; this animal completed the course with half a fault or, in other words, displaced a chip and yet did not secure a prize.

It appeared to me that the type of animal suitable for Olympia is an aged horse that has had considerable schooling over a course of a similar nature; even then it will be lucky if it gets a prize without having competed on two or three occasions.

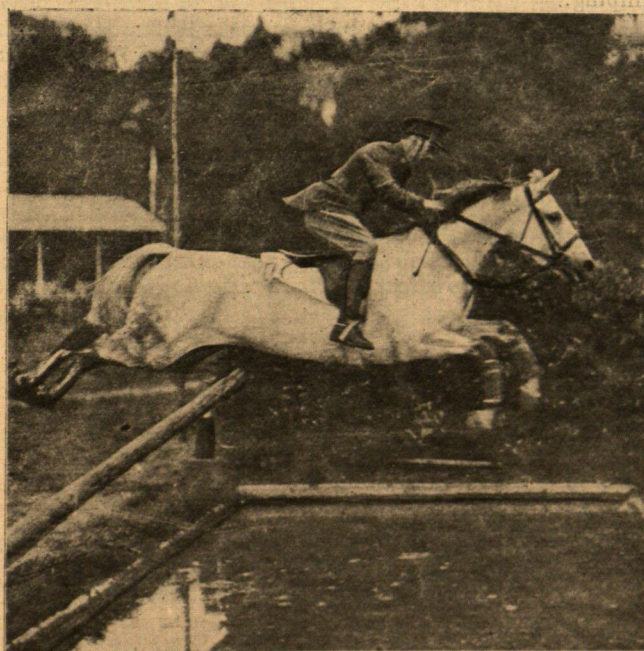
When the team reached Lucerne, they found an absolutely different course and a different method of jumping and "marking" from the Olympia system. The fences at Lucerne were mostly big, bold fences dotted over a small open course, in various positions and at varying angles. They varied in numbers for different competitions from eight to sixteen and were so placed for each competition that a horse had to practically jump an entirely new course. They consisted mostly of timber of varying heights, *i.e.*, walls with timber in front and on top, banks with



The Irish Army team which competed in the International Military Jumping Competitions at Ballsbridge, Olympia, and Lucerne. Left to right—Capt. Harty on "Cuchullain," Capt. Corry on "Mac an Iolair," Capt. O'Dwyer on "An t-Oglach." Photo.

timber on either side, roads with fences on each side, railway crossings, water with timber on either side, etc., etc.

The marking varied for different competitions according to the regulations for each. Some competitions were marked on time plus faults, others were marked on faults with a minimum time to complete the course, and others were marked on faults only, except in the case of a tie when the horse that completed the course in the shortest time was given the prize. On account of the time-plus-faults marking, tactics enter a good deal into the Competitions. For example, a French horse completes the course in 1 min. 50 secs., with two faults, the next Swiss rider tries to complete the course in 1 min. 45 secs., with perhaps four faults. For this reason, the country with the largest number of horses has a much better



Capt. Harty on "Mac an Iolair," taking a Water Jump at the Military International Jumping Competitions in Switzerland.

[By kind permission of *The Irish Home Journal*.]

chance of getting a first prize than the country with the smallest number, apart altogether from the fact that numbers count in any individual competition. The Irish horses jumped very well in some of the Competitions, and were rather unlucky to secure only minor prizes, but it was evident that both the riders and horses required more training and more experience at this type of jumping.

At Olympia the majority of the first prizes were divided between the French and British, the French securing the larger number. At Lucerne they were divided between the French and Swiss, the French again getting first place. It was generally agreed by the foreign Officers competing at both Olympia and Lucerne that the French Army have the best all-round team in Europe this year, and from what

one could observe, this is mainly due to their consistent training. Their main object was to get a horse to clear each fence consistently with the least possible effort, the result being that they invariably succeeded in getting two or three horses to do a clear round in every competition. On the other hand, it was quite a common thing at Olympia to see an Italian or a Pole jump brilliantly over six fences and crash at the last gate.

The year 1927, at Ballsbridge Show Ground, saw in the main event a combination of the Irish hunting obstacles, and the timber jumps of Olympia and the Continent. Again, though one of our riders received special mention and prize for the best round—49 out of a possible 50 marks—we were unable to maintain this form. It will require years of experience to enable horses and riders to maintain a consistently high level in what may be described as a hybrid type of Irish-Continental jumping.

NOTES ON AERIAL PHOTOGRAPHS OF TARA.

BY

L. S. GÓGAN, M.A., National Museum.

ONE does not need to have a very extensive acquaintance with either Irish literature or Irish history to realize how largely Tara loomed in the national outlook of former generations. Beginning as the seat of the Kings of North Leinster it rapidly attained a position of pre-eminence, thanks to the progressive spirit of the great Connacht dynasty which aimed at monarchical control of all the island. Having first spread their aegis over Westmeath, and made Uisneach their chief centre, the Connacht Kings rapidly extended their sway over the northern and eastern territories. Tara presented many advantages. It gave easy access to the provinces; it was naturally a strong and easily-defended position; there was water in abundance, and the district was the most fertile in Ireland. From the time of Cormac Mac Airt onwards it came to symbolise the idea of monarchy and national unification. It was so to Brian Bóirmhe (who styled himself "emperor") in the eleventh century, while in the eighteenth and early nineteenth century we find modern Irish poets lamenting the deserted state of Tara as symbolic of the enslaved condition of the nation. These aerial photographs give a good idea of the present condition of the hill, and help one to realize the imposing character of the structures which once ornamented the summit.

(1). Aerial photograph of Tara showing the great enclosure of Ráth na Ríogh dating from the reign of Cormac Mac Airt in the latter half of the third century. The conjoined raths in the centre are respectively Teach Cormaic (Cormac's House) and the Foradh (the Dais) near the vallum. On the summit of the former are the statue of St. Patrick and the phalloid monolith called the Lja Fail (wrongly translated 'Stone of Destiny'). The latter originally stood beside the Dumha na nGiall or Mound of the Hostages which may also be seen in the photograph on the long median of the Ráth na Ríogh, near the vallum. Just outside is Rath na Seanadh or Rath of Synods, adjoining the modern church.

(2). Aerial photograph of the northern slope of Tara showing from left to right part of the vallum of Ráth na Ríogh, the Ráth na Seanadh (notice how its vallum has been thrice cut across by modern walls), and the ruinous remains of the Teach Míodh-Chuarta or House of Central Visitation so called in reference to the Triennial Session held at Tara. These remains are represented by the two parallel straight lines extending from Ráth na Seanadh and intersected towards the entrance by the road.

(3). Aerial photograph of the north-western slope of Tara showing the Teach Míodh-Chuarta (at foot), Ráth Gráinne or Rath of Grainne (daughter of Cormac MacAirt), and the sharply-sloping wooded declivity called the Claon-fhearta or Sloping Graves where Dúnlaing Éanna Niadh, a prince of Leinster, put thirty of the ladies of Tara to death one Samhain Eve during Cormac's reign.

The photographs, taken by the Army Air Corps, show the great value of this type of photography in surveying ancient remains. A bird's eye view so obtained affords a very convenient method of tracing the outline of former earthworks—as the change in the colour of vegetation (consequent on the old disturbance of soil) is very noticeable from above and may entirely escape observation at close quarters.



PLATE 1.



PLATE 2.



PLATE 3.

Connus do h-Ainmnigeadó "CURRAC AN LAOIS" AGUS "TOBAR NA LEAMNACHTA."

CAPTAEN R. Ó RÓGLUDDA, IAD. CAT DO SOLÁSTRUIS.

Nuair do bí Cormac 'na Rí ar tuaró Muman bí tioránac mór de tigeárna i mBaile Treasna, áit in a raib caisleán aise. D'iongantac na sgriosadóirí iad é féin agus a clann. Mac Briain do b'ainm dó agus is mór an bhrógail, an sgioba, agus an cosgar a d'eimead sé 'sa scomarsanaect.

Bíod sé i scaismirt agus i n-aéirann le gac Taoiseac eile, go mór-mór Ó Duibhir Taoiseac Cill na Manac i dtíobradóir árainn tuaró. Deirte go raib sé i n-éad le Ó Duibhir agus deirte a malairt; go mba maith leis connrad a déanam le Ó Duibhir.

Pé scéal é do b'ois ag gabáil d'a céile gan stad gan staonad nó go raib an Dutais sgríosta aca arson agus na daoine siotcanta cráidte ciapaithe aca.

Áct bí taob eile leis an scomrac i gan fios dos na príomh-comracteoirí. Tárla go raib mac ós ag Ó Duibhir, Cill na Manac, ar a dtugtaí Eóin. Plait ós, lutsáireac, sealgáireac, scapánta do bí ann. Ní raib a sárú le págail ar fuo réirde na Muman le cleasa-luta ná le neart géag, le luacas agus comact reata; le linn fiaúigeacra fiaúai tar fiaúai do b'ead é.

Ba 'mó bean-plait ós gur mian léi Eóin do pósad: ac ar iongnad an domain níor tug Eóin grád d'aoimne, ac d'aoipe, ingean Míe Briain, a sheana-namá. Ní nae iongnad gur tug sé grád d'í, mar le háilneact agus le huaisleact ní féadad sé sárú aoipe d'fáil in lataib na h-Éireann. Is deacair grád a déanam le h-ingin do namad, ac d'eimeann grád gáire pé corraí cruada an t-saogail. Mar sin is beag turas i n-aise do bíod ag Eóin nuair do tagad sé ar cosanairde ar capall tar na báintib réirde fairsinge ag triall ar a grád geal.

Bí leas-dearbúir ag aoipe daró' ainm áimne. Má bí aoipe ar áilneact an domain bí áimne ar gránnaect an domain. Má bí aoipe ar cartanaect an domain bí áimne ar nimneact an domain. Má bí aoipe ar cráidteact an domain bí áimne ar diabailioct an domain. Bíod áimne ag cleactad b'raoideacta i gan fios d'aoimne. B'é torad an teagaise agus an tógamh a fuair sí le linn a h-óige ó sean ollam a claoir pós leis an t-sean-nós b'raoideacta cé go raib sé in a Críostai nó in a leat Críostai 'san am san.

Bí an Eaglais go dian doct i scoinnib an nóis páganaig seo an uair sin. Ní raib aon dul as ag aoimne a bead cionntac i n-b'raoideact ac bás d'fulamg ag an gcaille.

Lean an cogad roir an dá clann níos géire agus níos déime ná 'riam, agus bí Eóin go h-eadócasac mar geall ar a grád. Ní leigfead Mac Briain dó fuo dul cun camnte léi.

Bí iomaig Laois óir ag Mac Briain agus do geall sé go dtabarpad sé a ingean aoipe le pósad de'n té a déanpad a luac do tomas le h-aon tsúit féadamt amáin. Ac. dá dteipead ar an iarratóir an tomas ceart a déanam leis sin caillfead sé a ceann. Ní gan fáct do b'amlaíod mar teastuig uaró na cinn a baint de clannaib na Muman do bí 'na coinnib i dtreo is go mbead ceat cos agus an lám uactar aise ortá agus iad laguite mar sin. D'eirig go h-álumn leis 'sa beart fealltae so, mar ba mó ógánac riofda agus plait a caill a ceann 'san dá síge.

B'é réirdeac na ceiste ná sean-rann in ionad suim áiríde airgíod mar luac ar an Laois. Ní raib fios ag aoimne air seo ac amáin ag Mac Briain féin agus ag a ingin áimne. Cé gur mimic beal gan sgot ag mnaoi ní raib beal gan sgot ag áimne.

Is 'mó iarract a tug aoipe ar an rún do meallad uairi áct má tug féin sin a raib aici d'a bárr, mar bí éad ag áimne le haoipe agus éileam mór aici ar Eóin.

Bhíod Áinne i bpeiríil an teaghlais agus b'iongantac an flúirseac me agus uachtair a bhíod aca. Bí amhras ag doirpe ar Áinne mar-geall air seo, mar thug sí ná féadfaid an créad bó a bí aca é a tabairt. Mar dheimniú air sin connaic sí ag tobair a bí pe draoirdéac oróde áiríte bealtame i. Tá an tobair so suróte i gceart-lár gleanna uaignis ar a dtugtar Gleann an t-srúctáin. Tá cnocáimíní beaga maola tart timpeall air agus Surde Finn i n-giorrac leat míle ód ar an otaob toir. O'Innis doirpe o'Eóim go mbéigin o'Áinne beir ag an tobair airis an oróde bealtame seo a bí cuca. Socruigeadar annsan ar beart a déanamh a cuirfead o'iaclaib uirrí an rún do sceit-ead. Nuair a táimis an oróde bealtame o'fan Eóim ag faire agus é i bpolac dó péin i lár tuir sceite a bí ar bruaic an tobair. Bí a cú "faol" i n-éimpeac leis.

Ní ró fada an moill a bí air gur airis sé an coiscéim éadrom gearr ag tuitíúint pé dheim na h-áite 'na raib an tobair. Do tsonuig an cú an dranngaíl ac cuir Eóim o'fíacáint air a beir in a tóst. Táimis na coiscéimeanna go dtí bruaic an tobair mar a stadadar. Do dheim Eóim na sceaca do sgaramaint go dtí go raib amarc maic súl aige ar an gcoisi agus cé bead ann ac Áinne is cána 'na láim aici. Tóg sí roinnt de'n uisce tar éis rann draoirdéac do canad os a cionn. Ba leór san o'Eóim. O'Eirig sé de preib agus cuair sé pé 'n-a dheim is a cú le 'na cois. Com luat i n-éirínn is do connaic Áinne iad do leis sí scread uatbtásac aistí le neart scannruigte; o'iompug sí agus do dheim cómarca éigim. O'feac Eóim, ac slán beo mar a n-innstear é, i n-ionad mná anois cad a bead ann ac gírrfíad. Tosnuig an t-seilg agus a leitéro ní fada dume beo ariam. Bí corrán geallaise 'na surde o'foillsig an t-seilg oróde seo. Lean an t-seilg tar cnocáib is gleanncaib gur eirig an gírrfíad corca tháite draoicta agus sí go raib an cú tabarta go leór bí sé ag breit uirrí sac nóimead le neart a luatais. Tar éis falla cloic a bí timpeall sean potraig do sroicint rug an cú greim uirrí ac le scread o'mitig sí uair. Isteac léi trí dhoras an t-sean potraig. Lean Eóim i. Cuir se "faol" pé smact. Pé mar do síl sé bí Áinne sinthe istig roimis agus i i bpanntais. Tar éis tamailín táimis sí cuici péin airis. O'larr sé uirrí an rann do noictad.

"Anois a Áinne" ar seisean "tá an lámh uachtar agam ort. Innis dom an rann sin."

"Ní neósad mar ní thugim cad atá uait."

"A! Tuigir an fíorsú, an daorad, an cuaille, an dógaó agus an losgaó. Tuigir baluit do curo feola péin agus i dá losgaó ar do cnámaib. Tuigir na slóigte bailite tart timpeall ort san truaig san caise duit agus tusa ag fulaim báis náirig caillige. Muna n-innseocaró tú dom anois é raigfad go Caiseal go breicfead an t-áro-easpos."

"Ní neósad."

"Tá go maic, biod sé ort péin."

Amac leis agus do léim sé ar dhuim an capail airis. Com luat is cuala Áinne ag imteac é táimis scannrad uirí agus do glaoir sí air. Táimis sé tar n-ais agus do géill sí dó, ac ar comgíoll amám, go mbead an scéal ar imteactaí na h-oróde sin 'na rún aige. Sin ar teastuig uair. O'Innis sí dó é. Annan cuir Eóim ar dhuim a capail i agus o'iompar sé go tig feirmeóra i. O'fas sé pé cúram mná an tige i tar éis a minú gur tuit tionóisc amac dí ar an ghenoc. O'fíll sé go ar ácasac go Cill na Manac. Níor bfaid in a duiar sin gur tug sé a aigad airis ar Baile Treasna.

Bí iongnad an domáin ar Mac Briain nuair do connaic sé a sheana-nama ag teact pé 'na dheim. Ac bí ácas air nuair a fuair sé amac go raib sé cun tabairt pé'n duais doibinn do breic leis; bí a ceann com maic agus caillte aige dar le Mac Briain.

"Tá fút an tomas a déanamh agus tuigeanm tú na comgeallaca," arsa seisean ag tabairt le Eóim.

"Tuigim" arsa Eóim "agus glacaim leo."

Tionnlaic sé Eóin isteach go dtí an hálla mor mar a raib an iomáig. Bí na báird agus na saoi bailite sa láthair. D'eirig doo, báird an teaghlais, agus do cheistig sé é.

"A mhic Uí Duibhir, cionn tú an iomáig agus innis dúinn v'adon iarraect amháin lúac na h-íomáige."

D'íompuidh Eóin ar a sáil agus do labhair.

"Earrac tirim agus bealtame ceata

Sin lúac do Laois : San fogmar meacta."

Ní féidir cur síos ar an raet feirge a táinig ar Mac Briain nuair do connaic sé go raib buairde as a namair air. Ac ní raib sé réir leis fós. Cait sé isteach i gcarcar mar gíallac é.

Le cóm-oibriú doipe d'éaluidh Eóin as an gcarcar. Do pósad leis i. Nuair a connaic Mac Briain go raib gac beart ear eis clisead air do gheill sé. Dein sé comrad siotcána roir é féin agus Ó Duibhir. Táinig Ó Duibhir ós go baile Treasna cun cómnardte ann. Ba mhór an raet ar an dúctais é.

Tá slíocht a steacta ann go nuise seo. Sin mar do h-amnigead. "Tobar na leamnaecta" agus "Curraet an Laois."

NOTA : Tá bunús an gseil seo i bPalás Gréine i Luimnig. Tá a dicitú agus na h-amninea dicitúla seo a luairdear le feiscint ar Mapa O. S. na dúctais sin.

WHY WE NEED A DEFENCE FORCE.

By COMMANDANT D. BRYAN.

1. The Defence Force* is too costly as a National ornament. It is too costly as an armed reserve to an unarmed police. But, it is not too costly as an Army for the defence of the Saorstát if it can be established that it is essential to and efficient for the Defence of this State, and, before it can become efficient, the realisation of its necessity must be complete and unqualified. It is to establish that it is essential that the considerations hereinafter submitted have been prepared.

In the Saorstát, until recently, the case for the existence of an Army has been based almost entirely on the need for the preservation of internal order. Later, occasional and rather vague references have on a few occasions been made to the possible development of external events which might affect the Saorstát militarily, but these events have, on the whole, been regarded as contingencies so remote as not to merit serious consideration at the moment. In this article it is, however, submitted that the reasons for a Saorstát Defence Force may be divided into two general categories:—

- (a) Those connected entirely with problems of internal order, and
- (b) Those connected with external developments of a nature likely to affect the Saorstát (and which, if historical precedents repeat themselves, as they often do, may, under certain circumstances, affect the internal order of the Saorstát).

2. Internal Order.

It is not proposed to deal with the question from the purely internal order point of view, beyond stating that when the external contingencies are examined in detail, they will be found to be so much more important that it will be immediately apparent that if any attempt is made to maintain a Defence Force to deal with the external contingencies, it will be more than adequate to deal with any situation that may arise as a result of internal disorder. It is also advisable to direct attention to the highly undesirable state of affairs existing in certain countries where armies owe their *raison d'être* to or at least suffer from what might be called the "internal order complex," and to suggest that although this mentality is primarily due to an internal state of instability arising from other causes, the

cultivation of the idea in any State that the first or main duty of its army is the preservation of internal order, may not be good either for the Army or State concerned.

3. External Contingencies.

(a) *Geographical.* The question of external military contingencies is rather difficult to deal with, and has not previously received attention. It can, however, be stated at once that these contingencies primarily arose out of the Saorstát's geographical position in its relation to the maritime trade routes of the world, and not to its political or international status. It has not mattered to Belgium whether she was a dependency of Spain or Austria, or an independent nation with her neutrality guaranteed by the Great Powers; in every great war, her territory, because of its peculiar strategical position, between the French and German Nations, and dominating the English Channel, has become one of the principal theatres of operations. Ireland too has been involved in some way in all the great struggles between Britain, France and Spain for maritime supremacy. Irishmen

*The term "Defence Force" and not "Army" is used because it will be quite apparent on consideration that, for the contingencies described, a well-balanced combination of Land, Aerial and Marine Forces, and not merely a Field Army will be needed.

may believe that France and Spain encouraged us to become involved in these struggles because of a sentimental interest in the cause of our National liberty; the real motive will assuredly be found in the fact that, to use the words of Admiral Mahan, the eminent American thinker on the Science of Naval Strategy: "Ireland, by geographical position, lies across and controls the communications of Great Britain with all the outside world save only that considerable but far from preponderant portion which borders the North Sea and Baltic." Mahan, when he wrote these words, was only dealing with the relation of Ireland to Great Britain, but recent events have made everybody in this country aware that it is impossible to fly from America to any, except the Mediterranean countries of Europe, without touching or passing close to Ireland, and a very short examination of a map indicating the trade routes of the world will satisfy those interested that Mahan's description can also be applied to Ireland's relation to the trade routes of all other European countries with the exception mentioned. At the moment, when the recent Geneva Conference on Naval Disarmament is fresh in the minds of everyone, it is hardly necessary to stress the extent to which trade routes and the capacity of Naval Forces to control them figured in the minds of the delegates to the Conference, but it may be stated that it was made quite plain that the factor on which depended the actual life of maritime States was their capacity to safeguard trade routes vital to them. In this connection, it is not necessary, in view of recent events, to stress the importance of Ireland in relation to Trans-Atlantic aerial routes.

(b) *Historical.*[†] It is quite apparent that we in the Saorstát have lost sight of its geographical and historical relation to Europe. The reasons for this are not far to seek. The principal reason arises out of our historical concentration on internal events; others arise out of the situation during the European War. The prevailing opinions of the world with regard to questions of international affairs and war are still largely based on impressions formed during that war, and in Ireland this has led to a fixation of false ideas. The attention of Irishmen was so particularly concentrated on internal matters from 1914, that they lost sight of the very considerable extent to which the submarine war was fought out off the Irish coast and in adjacent waters. But a more important factor is that the geographical position of Germany with Great Britain lying across and controlling her communications with the outer world (just as Mahan states Ireland does in the case of Britain) confined the principal activities of the hostile fleets to the North Sea, as in the Dutch wars of the seventeenth century. The result is that the Irish coast figured only in submarine and mining activities with the solitary exception of the incidents in Tralee Bay in April, 1916. This, however, should not blind us to a realisation of the importance of the Irish coast. The Allies, during the European War, were never as near despair as in the period which the Naval Authorities called the black month of April, 1917, when 1,000,000 tons of shipping was sunk. Of the great centres of submarine activity in which this destruction was wrought, the most important was the area running from the South Irish Coast to the Brittany Peninsula with the area round the North Irish Coast and running via the North Channel into the Clyde, Mersey, etc., a hardly less important centre of such activities.

Briefly, as the Irish coast is to-day in the eyes of the world, but in particular of the British, Americans, French, and Germans, so it has been in the eyes of the soldiers, sailors and statesmen of the days of Phillip's Armada, or when Louis XIV. pitted France against the combined might of Europe. An old ballad has made

[†]When referring to the general lack of knowledge of this aspect of Ireland's history, it must be admitted that no standard work deals with it. Professor Seamus Hogan issued one volume of a study of "Ireland in the European System," and it is to be hoped that as the events which interrupted his work are no longer operative, further volumes of this study will be forthcoming.

us all familiar with the fact that a French Fleet was once in Bantry Bay, but few realise that this was only an incident in the mighty struggle between the new French State and Great Britain. Similarly, Americans, when reading of Bantry, Valentia, etc., are only renewing acquaintance with places familiar to their sailors under Admiral Sims in 1917-'18, equally well known, a century and a half previous, to their great naval hero, John Paul Jones, and not unfamiliar to their commerce raiders in the war of 1812. A little study of Irish history and its consideration from the point of view suggested ought to convince anyone of the exceptional importance of Ireland in relation to questions of maritime and naval power. Having arrived at this stage, the natural sequel ought to be an examination of Ireland's relation to these mighty problems and how such problems are likely to affect the Saorstát in peace and, more particularly, in war.

IV. *Defence Aspect of Commonwealth Status.*

The most important factor in the Saorstát's relation to present-day international problems is the international agreement between the Saorstát and the British Government by which specific maritime rights in time of peace, extended in time of war, are guaranteed to the British Government. This agreement must certainly have a profound and far-reaching effect on the viewpoint of strategists when considering the Saorstát position in the event of maritime conflict.

In these days, when we hear so much of our position as a State in the British Commonwealth of Nations and in the League of Nations, it is desirable to consider the bearing of our position as a member of both these bodies on our Defence Problems. We must not lose sight of the fact that our position as a member of both these bodies was primarily made possible by the attitude which Canada, Australia, etc., adopted to their Defence problems. Taking this consideration first, it must be borne in mind that the status of Canada, Australia, etc., has enormously changed since 1914, and it is submitted that as far as the international aspect is concerned, this change is entirely due to their having in the decade before the war first taken over entire responsibility for their land and later for their local naval defences. The scope of this article does not permit of a detailed examination of this question, but the fact remains that in August, 1914, with the one exception* of certain British troops in South Africa, Canada, Australia and New Zealand, were absolutely responsible for their home defence, and this fact was recognised by the nations of the world. Without entering into explanations as to why the Australian Government felt that they would best secure the dominance of the white race in Australia (the fundamental principle of their defence policy) or the motives that similarly led New Zealand, Canada, etc., to send Expeditionary Forces to Europe, we come to the period at which the Peace Conference was assembling and questions of representation both in the Peace Conference and the League of Nations had to be decided. Lloyd George, in accordance with the principles on which he had obtained Expeditionary Forces from Canada, Australia, etc., had now to support their demand for representation in these assemblies, and as the Continental Powers and the United States were inclined to object, their case succeeded, not so much on theoretical questions of their international status, as on the ground that these States had on their own initiative made as big a war effort as many of the small European States, and in fact that more Canadians and Australians had died in action than Americans. These facts may be stated to have little application to the question of our need for a Defence Force, but our international status as provided for in Clause 1 both of the Treaty and Constitu-

*Owing to South Africa's attitude on the outbreak of war, all British troops were withdrawn and the defences were entirely handed over to the South Africans. After the war an agreement was arrived at which provided that although the British would continue to use certain harbours, the responsibility for their land defences was left in the hands of the South African Defence Forces.

tion is based essentially on that obtained on these grounds by Canada and Australia, etc. This consideration is urged with a view to showing to what extent international status exists on capacity to assert and defend it by force, and although it is not suggested that our Forces would be used in the same way as those of Canada or Australia, the general application of the principle holds.

Having examined the conditions under which Commonwealth status was obtained, it now remains to see how it affects the defence problems of States holding it. The position broadly stated is that all States in the Commonwealth are absolutely responsible for not merely the preservation of internal order in their States, but for their defence against external aggression whether Military or Naval. Considerations have been urged in this article to show that under certain circumstances the local defence of the Saorstát can become a live problem, and if we cannot maintain our own local defences our whole Commonwealth status will tend to decline.

V. *Neutrality Issue.*

Discussions in the Dáil and elsewhere would indicate that in the past year certain persons have realised that the factors referred to in para. IV. would, in the event of war, decisively affect our position, and they have accordingly made suggestions that measures should be taken to have the neutrality of this state guaranteed presumably on the basis that we would disarm except for purposes of internal order. Apart from the impracticability from any point of view of this suggestion, it is obvious that an exaggerated value is given to peace-time guarantees of neutrality, and that a grave misunderstanding of the position of neutral countries during the European and previous wars exists. The outstanding example of a country's neutrality guaranteed internationally is Belgium, and the results should not create enthusiasm. A brief examination of the position of the neutral small countries (Switzerland, Holland, and the Scandinavian nations) during the war is also desirable. Quite recently a prominent public man has, in referring to this question, asked: "Could we not save ourselves as Holland did?" evidently in the belief that with some change in our status we would be free from all responsibility of entanglements in international conflicts. How, in fact, did Holland save herself? By putting 500,000 men under arms on the outbreak of war and keeping them on guard on her frontiers until after its termination, and in addition preparing, in extremity, to indulge in the time-honoured if desperate expedient of flooding portions of their country in its defence. Similarly, Switzerland mobilised its army to guard its frontiers, and in addition placed complete executive power in the hands of its military chiefs. The position of the Scandinavian countries was similar with this development, that they more or less reverted to the historical expedient of forming a league to preserve their interests as neutrals. Denmark, a country of about the same economic and man-power resources as the Saorstát, immediately put 70,000 men under arms in addition to using its Naval Service to mine and guard its territorial waters. In Sweden, universal military service suddenly changed from an accepted theory to an absolute practice, and in Norway somewhat similar measures were taken. The common action of the Scandinavian Powers had much to do with safeguarding their position right through. As illustrating this point one outstanding incident may be cited. The Americans were undertaking the enormous work of attempting to close German submarines into the North Sea by laying a mine barrage across it from Scotland to Norway. We are informed in the official report of their planning section in Europe that consideration was given to the necessity for having a base at the Eastern end of the barrage in Norway, but a foot-note states that when the political reactions of such an attempt on all the Scandinavian countries was considered, the project was abandoned.

It is hoped that a consideration of these facts will satisfy anyone that the small non-aggressive powers of Europe are evidently convinced that their neutrality can

be more assuredly preserved in time of war by their own armed strength than by international guarantees, and that even if the hopes of certain persons as to the Saorstát's neutrality were realised, disarmament could not ensue because historical experience clearly establishes that defencelessness will never preserve a country from aggression.

6. *Possible Positions in Event of War.*

Having established from historical precedent and geographical factors that the Saorstát is likely to be affected by any great Naval conflict, and having also indicated that the possible effects on the Saorstát of such a conflict are not likely to be counteracted by either disarmament or changes in our international status or relations, it is necessary briefly to state what the actual situation in the Saorstát during such a conflict will be, assuming that the Saorstát's Treaty commitments are recognised. The situation will be influenced almost completely by the extent to which the Saorstát will have developed a Defence Organisation to meet it. If the Saorstát has prepared a comprehensive defence scheme it will be able to take over the complete protection of its coasts, and Great Britain will merely have to get facilities under clause 7 (b) for the operations of her ships on the high seas.

Again, to visualise the problem from the opposite extreme, in the event of the Saorstát seriously neglecting the development of its defence organisation, it is possible that Britain would, for her own security, have to demand very wide facilities. When the crisis does arise, the true position will be anywhere between the two extremes mentioned. The strength of the Forces necessary for the Saorstát's defence will vary with the circumstances of the major conflict, but at all times they will have to include Aerial and Marine as well as Land Units. The land forces will supply the necessary protection to various vital points, such as harbours, industrial centres, wireless and cable stations, etc., round the coast, and, in addition, co-operate in the prevention of possible raiding parties getting into the interior of the country. If the circumstances are such that raids in force or something approximating invasion is feasible it will be necessary to hold effectively the important harbour, estuaries and other points giving entrance to the country, and for this purpose it will be necessary to provide some fortifications in peace, and certainly to be capable of improvising them in war. Aerial units will be required not only to deal with actual attempts at raids by enemy squadrons, but also and probably primarily to scout for possible larger enemy movements at sea and to continuously reconnoitre and search for the activities of submarines or the presence of mines in the waters adjoining the coast. Naval craft will be required to deal with submarine and mining activities, for reconnaissance, and lastly, but most important, to keep the traffic routes clear of mines—in fact, generally to supervise and control merchant shipping. In addition, a Coast Guard would be necessary to co-operate with the other forces mentioned in keeping the whole coast line and adjoining waters under continuous observation. If Saorstát Forces are able to undertake these duties, they will already have their supply depots and reserve and lines of communication throughout the interior of the country. In the event, however, of British troops having to undertake these duties, they will not be satisfied to maintain a number of detachments at various points on the coast without assuring both their supplies, military security and communications by holding depots and reserves at points in the interior of the country. A force engaged on such duties will also, for its own protection, have to take measures to prevent leakage of information as to its dispositions and activities, and considerable care will have to be taken to prevent information getting about as to the movements of shipping, both Naval and Mercantile, on the coast. The movements of all ships to and from Irish Ports will be controlled, and in a hundred other ways, the force on which these duties will devolve will have to interfere with the ordinary activities of the people and otherwise generally with the civil as well as the military administration of the country.

VII. *Why we should assume responsibility for Saorstat Defence.*

When suggesting that the Saorstat should assume, as far as possible, responsibility for its complete defence, it must be understood that Clause 7 (b) of the Treaty makes this a question for mutual arrangement between the Saorstat and Great Britain. No difficulties need, however, be anticipated on this account because Britain's policy is to encourage the States of the Commonwealth to assume complete responsibility for their own defence so long as due facilities are made for the necessary world-wide activities of her Fleets. During a discussion of this matter with an economically-minded taxpayer on one occasion, he suggested that as Britain must for her own security maintain certain defences here if the Saorstat does not, that we should let her do so, and save the State the expense, and he refused under any circumstances to see the matter in any other light. This gentleman who represents a common type of mentality, does not realise that if an army or navy has in time of war to protect a country or district, it has, as briefly referred to in Para. VI., to interfere in the civil and even economic administration, and in fact such a Force practically governs the area even when a wide and not narrow interpretation is put on the expression "govern."

In Para. IV., reference has already been made to the connection between the present status of States in the British Commonwealth and their capacity to defend themselves. Apart, however, from questions of status, it can be taken as axiomatic that economic and civil follow military dependence. A certain incident in our National history illustrates better than pages of theoretic disquisitions the general dangers likely to ensue as a result of military dependence. In the days of Grattan's Parliament* Ireland enjoyed, for constitutional purposes, a very large measure of freedom. Without dealing with the constitutional issues of the period, it is sufficient to state that executive power was entirely vested in the hands of the Lord Lieutenant and his Ministers or Departmental Chiefs who, although members of the Parliament, were often members of the minority in it. The Lord Lieutenant was appointed by, and went in and out of office with the British Ministry, and, as he exercised through the Military Branch of the Chief Secretary's Office, absolute control over the Forces in Ireland, once Parliament had voted certain supplies, the result was that the British Ministry could influence and deal with the military situation in Ireland as they thought fit. In due course, a British Premier (the Younger Pitt) appeared on the scene. He believed that for the better welfare of Great Britain, the Irish State should be destroyed and made one with Great Britain. All Irish histories agree in stating that after the Volunteers had gone out of existence and other efforts had failed, he decided that a military situation should be created in Ireland which would frighten various prominent opponents of the proposed Union into acceptance of that measure. He succeeded in both creating the situation and forcing the Union. Although the Saorstat Ministry now enjoy complete executive power, in the event of the defence of the country being abandoned to the Forces of Great Britain, it cannot be imagined that their Executive power will extend to such forces. The British Ministry would, therefore, be in a position to influence the military situation in the Saorstat as they did in the days of Pitt.

Those who may feel inclined to view this matter from the purely economic standpoint of the taxpayer should carefully consider the general results of outside military control in view of the particular results in the instance quoted.

VIII. It is hardly necessary to point out that it is obviously impossible adequately to treat such an important subject in an article of this kind, but it is hoped that the propositions submitted will be further considered both by Officers and by those who can in any way influence the policy of the State. These propositions should interest Officers because they will assist them in forming views as to the future

*The whole Grattan Parliament epoch is another example of constitutional liberty and economic prosperity following military independence.

work of the Army; and at the moment, when it is beginning to be generally realised that without definite views on questions of policy, it is not possible to apply the requisite driving power to the solution of various problems, it is particularly desirable that Officers should have views on our probable future uses. It is likewise absolutely necessary that those who control the destinies of the Army should more fully examine this question, because, to quote an anonymous British writer: "All Naval and Military preparations for war must depend upon a clear appreciation of the purposes for which the Forces of a Nation are intended to be employed." Without this "clear appreciation" on the part of those in control, the definite views on policy will not be possible, and without them the "driving force" previously referred to cannot be applied to the performance of their various duties by the Departments of the Army, or will be applied in wrong directions. Lastly, but by no means least, it is essential that the general public should have some appreciation of these problems. Unless they have, it will be impossible for any Government to maintain a force capable of dealing with the contingencies described. It is realised that the circumstances under which the need for the Defence Force may (or rather will some day) arise are somewhat complex, and possibly not as easily appreciated as in most countries, and for this reason the public may not so readily see why they are needed—at least for the reasons suggested in this article. Bearing in mind, however, that "the laws of History are as immutable as the laws of Nature," we will again take an incident from the history of another country which may serve as a warning. The United States, having established their liberties and consolidated their position at the end of the eighteenth century, and having no outstanding quarrels with any power, saw no occasion for the maintenance of an army or indeed a Navy; yet within thirty years they were, owing to similar complex circumstances, to become involved in the mighty struggle between Britain and Napoleon. A war ensued during which a British Expedition of only 3,500 men succeeded in burning Washington, their capital, and otherwise devastating portion of the States. We have not, of course, a mercantile marine to be interfered with in distant seas, which was the cause of the United States becoming involved in the war, but as against that our own shores and adjoining waters are right on the scene of all such conflicts. The outlook of the population and governing classes of the United States at the time was also similar to that of the Saorstát at present. All minds were concentrated on constitutional and internal administrative and economic problems, and, although the importance of these questions is granted, let us hope that we will not, like the Americans, concentrate on them to the exclusion of all else until we are rudely awakened by some similar catastrophe.

MORAL COURAGE.

The greatest of all is moral courage. It is a comparatively easy thing to face a gun—I have done it and have been unafraid—but, oh, it is a difficult, trying thing to stand up and fight for one's ideas and ideals in a world that is all too eager to attack both.

Ask the men who have blazed the way for civilisation, and they'll tell you that the most dreadful ordeal of all was the jeering of the crowd.

Sympathy is a nerve tonic. But the man who advances a new idea gets very little of it.

Convictions aren't hard to acquire. To stand by them isn't quite so easy.

Physical courage is largely a matter of nerves, rather than of nerve. Moral courage goes deep—it is founded on character, faith, the spirit of the conqueror.

My heart goes out to the man who has a better way, who knows he is right, and who braves the forces of convention until they give ground and finally bend the knee to his daring.—JEROME P. FLEISHMAN.

A PLEA FOR A HOBBY

By MAJOR J. P. M. COTTER.

THE Irish, as a nation, have achieved a reputation for wit and humour. It is alleged that as a nation we are losing our sense of humour. I am not concerned at the moment with the extent to which the allegation is true—suffice it to say that it has been asserted from within that we are unnecessarily ceasing to be a mirth-making nation, and that the laughter now heard most frequently in public life is the hollow laugh of the law court when my lord unbends and delivers himself of a remark intended to be mildly jocose. At a summer-session of the School of Irish Learning, twenty years ago, one of the students was a taciturn, icy Celt from overseas. One evening late he thawed, and in mellow accents expressed the opinion that the sense of humour should be fostered by the Gaelic Lague if our language was to be revived without disturbing the psychic equipoise of the nation. He added that he himself edited a humorous journal in the interest of his own tongue. In a struggle for liberty and achievement of national ideals an appreciation of the sense of proportion, with all its implications, may readily be lost.

As with the nation, so with the individual. If the latter concentrates too much on any one line of action he may lose perspective and become a monomaniac—the genius of a fixed idea. The normal individual is interested, in varying degree, in all the activities of mankind, sees himself and his work in proper perspective, and is under no illusion as to his proper relationship to the rest of the universe. He has the sense of proportion developed, and any deviation from the fitness of things appeals to his mirth.

Among the subsidiary interests of the average individual there is usually one which appeals to him in a special manner. It may be an intellectual pursuit, *e.g.*, the study of a language, or it may be a physical pleasure, *e.g.*, the playing of a game. Whatever his hobby, he seeks it when relieved from his daily round, to return with renewed vigour and zest to his usual occupation.

The routine of military life affords the opportunity, as it creates the necessity for developing a hobby. A moderately long spell of military duties even under the most favourable conditions can produce a feeling of fatigue, while a similar spell following in association with the appropriate combination of horses, hounds and fox, though involving much greater physical strain, is like a visit to Tír-na-nÓg. In the case of mental effort, the intellectual pastimes of some may appear drier and of less human appeal than the cancelled sections of the Defence Forces Act, and may involve greater toil than a close study of many Acts; yet the enthusiast rises from his pursuit mentally invigorated and refreshed.

A hobby should not be worked to death or its possessor becomes a bore, and the hobby, instead of acting as a counterpoise to more serious avocation, and preserving the balance which is so essential for the outlook associated with the normal, usurps the place of all other subjects in the thoughts and conversation of its victim. Who would not be just as well pleased to be done to death at the hands of a friend by endless references to “shop,” as by the reiterated jargon of the links or the repeated reminiscences of a modern centaur?

A hobby judiciously used is really a necessity for the average man if he is to remain mentally alert and develop all his faculties to the utmost. The choice is simply a matter for the bent of the individual. The number of suitable subjects is legion, for they represent all the sub-divisions of human knowledge and activity.

The selection may be kindred to daily professional work or at the other extreme. The chief point is to have one. As possessing special appeal for Officers of the Irish Army, particularly those in the isolation of an outpost, the following subjects are suggested:—Irish language, Irish topography, Irish history, Irish folklore (which is receiving a special fillip at the moment), Irish geology, either from an industrial point of view or with special reference to pre-historic human activities, Irish flora and fauna. It is not, of course, intended that choice should be limited to one group of subjects; indeed it is desirable to have more than one secondary interest, and to facilitate selection we can sub-divide hobbies into (a) indoor and outdoor, (b) hobbies which suffice for the individual, and those which appeal to the social instinct, (c) those requiring manual dexterity and skill, and those calling for purely mental effort. Each of these sub-divisions includes two types of subject—the antithesis and yet the complement of each other, and on this basis a choice of hobbie is to be recommended. From the above classification it will be apparent that I did not quite agree with the genius who assured me he had four hobbies—Bridge, Poker, Solo and Nap. As an upright citizen he would have rightly resented any query as to whether his activities embraced the two types of hobby outlined in sub-division (c). If you decide on mixed hobbies mix them on the lines suggested above:—Spurs and plus four do not go well together.

Hobbies there are to suit every age at little cost. There are some that appeal to the vigour of sturdy youth; others to the rotundity of later years. They may incidentally be a source of profit, and in this connection it is unnecessary to refer to the modest beginnings of many a successful philatelist and fret-worker. In later life you may even form a subject of conversation for honest burghers:—“What is that old gentleman with the field glasses doing?” “That, sir, is an ornithologist bird-nesting.” “And the other with the net?” “That is an etomologist hunting butterflies.” “There they go, hale and hearty, enjoying their army pensions, full of the joy of life, each completing a collection as precious in his eyes as a rare antique to the collector, or a rare work of art to the connoisseur. They have been at some such fad all their lives, and their bank balances are none the worse of their enthusiasm. They have been saved from many things.”

Apart from the benefit to the individual by way of increase of knowledge or of income, there is always the possibility of adding to the general store of human learning through discovery, and there is the certainty of amusing oneself and of preserving a level outlook on the affairs of men.

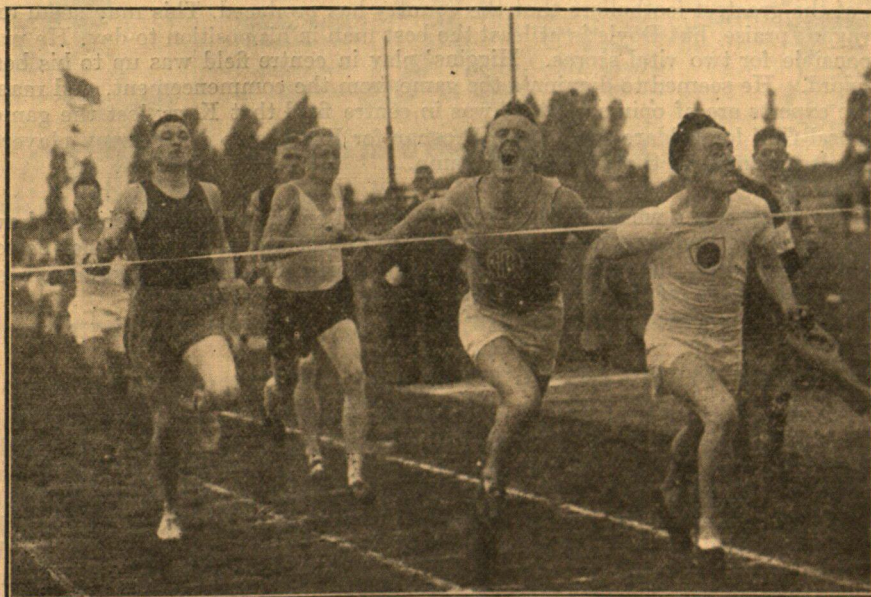
The individual nowadays has so many commercialised amusements at his disposal that he is losing the power of amusing himself, and in consequence tends to become a grumbler at the realities of life. It is refreshing in these degenerate days to hear of a grumbler who can grumble and at the same time show that he appreciates the unfitness of things. We have all heard of the honest citizen who complained of the high cost of living at 1/4 per glass. By all means let us grumble, if we must, but let us learn to laugh at the same time. This is not a plea for Rabelaisian laughter, but for a restoration of the normal laughter which should pulse like warm healthy blood through the social body. The man who broadens his outlook by indulging moderately in subsidiary interests is doing his share in helping to restore the balance of the nation in its outlook on mundane affairs, and will aid in restoring a wider appreciation of the fact that many things have another point of view which shows them in their proper light. After all, “Cave Canem” does mean “Céad Mille Fáilte.”

SPORTING NOTES.

By COMDT. C. McALISTER.

LIEUTENANT COUGHLAN'S SUCCESSES.

WE have all heard with pleasure of the many successes of Lieutenant G. Coughlan during the past athletic season. Since he came into public prominence by winning the Half Mile Championship of Ireland in 1925, this Officer has maintained a very high standard. It would hardly be an exaggeration to say that his reputation as an athlete is now a European one.



Lieut. G. Coughlan (right) winning the 800 metres at Leipzig International Festival, in August last.

Early in the season he was invited to big sports gatherings at Hanover and Bremen in company with other Irish athletes. He was later invited to the International Carnival at Leipzig, where he met the best continental runners. At each venue he was successful in the 800 metres event.

Perhaps the best commentary on his performances is the times he has recorded. His first continental experience was at Hanover, where he "clocked" 1 m. 59 s. A few days later, at Bremen, he did 1 m. 57 s., and at the Leipzig festival his time was 1 m. 56 $\frac{2}{5}$ s. Good as these performances appear, they are all the more remarkable because of the fact that Coughlan had a long and tiresome journey before each of the meetings mentioned.

The accompanying photograph shows the desperate struggle at the finish of the 800 metres race at Leipzig. Coughlan has done credit to his name and rank, and we heartily congratulate him on his splendid achievements.

GAELIC ATHLETIC ASSOCIATION FINALS.

In the recent finals of the Hurling and Football Championships, Army players have been prominent both with the winners and the losers. At the Hurling Championship no less than seven of our men took part. In this event perhaps the most meritorious display was that of Pte. Martin Hayes, who has been playing senior hurling for more than twenty years. Throughout the game, however, his play was characterised by a dash and stamina which many of our younger players might envy.

In the football final perhaps the most prominent men on the field were Sgts. Doyle and Higgins of the Kildare team. The former has, in fact, been described as one of the greatest footballers that the country has produced. This may seem extravagant praise, but Doyle is at least the best man in his position to-day. He was responsible for two vital scores. Higgins' play in centre field was up to his best standard. He seemed to dominate the game from the commencement, and many of the experts are of opinion that it was in centre field that Kerry lost the game. Corporal Goff for Kildare, and Capt. Brosnan for Kerry, two other Army players, were also prominent throughout the game.

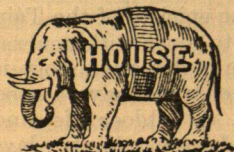
Army players as a whole are to be congratulated on the way in which they have upheld the best traditions of the Gaelic Athletic Association. It would not be too much to say that, in conjunction with the Garda Síochána, they have been largely responsible for the revival and popularity of Gaelic games.

"When the principle of honour and a sense of shame are firmly established in the human heart, they operate more forcibly than the fear of death," and are the source of all great and heroic actions: the more elevated the class to which a man belongs, and his position in it, the greater will be his exertions to gain the esteem of the public. A man buried in obscurity is little affected by honour or shame; the desire of pleasing ceases, and he degenerates into a savage, and approaches to the state of animals: hence it is that gentlemen are in general more anxious and delicate in what they suppose concerns their honour, than members of other classes; instead of depressing that class of men called soldiers, as we do at present, every method possible should be used to raise and exalt it: as the difference of classes produces more or less activity in the pursuit of those objects which are peculiar to them, so does that of government, which stamps on the whole nation a certain character different from that of others; some tend to promote honour and virtue, others to depress them."

Major-General HENRY LLOYD,
(18th Century).

Quoted in Army Quarterly, July 1926, by Colonel J. C. Fuller, D.S.O., who adds:—"An honourable man is not only esteemed by his fellows but by himself. His sense of honour creates a mutual civic obligation between society and the individual. If the soldier is looked up to as the guardian of civil liberty and justice, then he will be placed under such an obligation by his fellow men that in war he will face death to gain their praise and gratitude."

WATERPROOFERS AND
Waterproof Coats, Cycling
Overalls, etc.



Elvery's

LIMITED

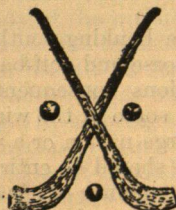
WE STOCK EVERYTHING POSSIBLE IRISH
MANUFACTURE.

CORK CHAMPION HURLEYS, 6s. each. HURLEY
BALLS, 5s. 6d., 6s. 6d., 7s. 6d. each.

Dublin Made
Football
22/6 and 15/6
each.

Jerseys, Boots,
Knickers, etc.

Catalogues
on application.



Golf Clubs made
to Order and
Repaired on
Premises.

Clubs by Leading
Makers.
Try Elvery's
Gipsy Golf Ball.

45 and 46 Lr. O'Connell St., DUBLIN.

34 Nassau St.,

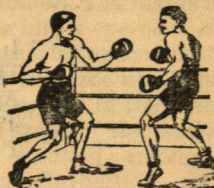
78 Patrick St.,

31 Conduit St.,

CORK.

LONDON.

SPORTS OUTFITTERS



Boxing Gloves 15/6 to 30/- set.
Boots, 12/6. Slips, 1/3.



SOLID SILVER PRIZE CUPS and BOWLS

(25 to 50 per cent. below Jewellers'
Prices).

Replica of "Ardagh" Chalice. Made
by Irish Craftsmen.

PRICES :

Width—6 $\frac{3}{4}$ inches	£5 17 6
" —7 $\frac{1}{2}$ "	7 18 6
" —9 $\frac{3}{4}$ "	14 10 0
" —11 $\frac{3}{4}$ "	21 10 0

A large variety of Solid Silver Cups
from £1 upwards.

MEREDITH & CO.,

Jewellers and Plate Dealers,

48 CUFFE STREET

(Stephen's Green) DUBLIN.

Largest Selection of Sports Prizes in Ireland.

WINTER-READING.

" I mend the fyr, and beiket me about,
Than tuik ane drink my spirits to comfort,
And armit me well fra the cauld thairaut.
To cut the winter-nicht and mak it short,
I tuik ane quair, and left all other sport," etc.

THUS a citizen of pre-Reformation Scotland—to be exact, good master Robert Henryson, a schoolmaster of Dunfermline—describes his preparations for enjoying a winter night towards the close of the 15th century—creature comforts, and a " quire " or book to read.

Soon the wild geese will come honking south and winter will be here. Rehearsal of the deeds of dog and horse and golf-ball, practical illustrations of doubling one-no-trump, with discussions consequent thereon, and the demands of social engagements will still leave some of the winter nights for reading. Our military interests, unlike those of a large nation or a widely-flung empire, are not such as to demand that reading-leisure should be entirely devoted to subjects of purely professional interest; we can, in a manner of speaking, temporarily turn the sword into a ploughshare in moments of relaxation. Tastes differ so widely—favourite authors ranging from the collaborators in Sexton Blake to the epicists of the Táin bó Chuailgne—that it is difficult to make suggestions likely to meet with general acceptance. Reference to Sexton Blake as indicating a type of detective story is not intended to be derogatory; such books indeed, like books of travel, give a good healthy atmosphere and inculcate a love of physical fitness, of outdoor life, and of moral rectitude and respect for law. If the complexity of society in the days of Homer had permitted the advent of the detective story—a surviving fragment of one not up to the standard of the much-maligned cheap-printed modern product would probably be venerated and treasured as a product of ancient genius. Such stories certainly are healthier reading than most social novels and tales, ancient or modern, and the healthy mind instinctively turns to them as healthy mental food.

If one's inclinations are towards light literature there is no need to whittle away the leisure time of winter with the flimsy ephemereal social novel. The historical novel is there in abundance, representing all ages from the ancient glories of Greece and Rome to modern days. Whilst not a substitute for history, and especially not for military history, it forms a very convenient system of consolidation after the study of a campaign.

History itself can be an interesting winter course—either in concentration on one particular age or country, or in a generalized form. Native history is of particular appeal to the Army of a country emerging from a struggle for independence. We should keep our knowledge of Irish history fresh—not to flaunt our ancient woes and wrongs—but to be in a position to appreciate ourselves, and consequently merit appreciation by others.

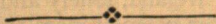
Winter affords an opportunity of renewing our acquaintance with the general field of literature by reference to any of the numerous standard text-books dealing with the subject. This applies more especially to our junior members, the formative period of whose cultural education coincided with the War period, a time not conducive to the study of literature as such. For the study of Irish Literature, Dr. Hyde's " Literary History of Ireland " forms a most fascinating text-book—and nothing more appropriate could be suggested. It is richly provided with extracts which in most instances have not suffered in the process of translation. In this connection it must be mentioned that the " Litríocht " of An t-Athair Mac-Clúin is a very fine example of critical analysis in Irish.

In English literature we have a brief compendium like Stopford Brooke's "Text-book of English Literature," and for the more ambitious, Saintsbury's or Taine's "English Literature." Such text-books, in addition to giving a bird's-eye view of the subject, constitute a study in cause and effect, showing the influences that moulded and changed the spirit of successive periods; in short, they are not only text-books of literature, but records of social evolution. Thus England of the 18th century had the soulless Correct School in literature; then the spirit of the world changed and revolutionary ideas sprang up which ultimately resulted, amongst other things, in the American War of Independence, the French Revolution, and '98. The literature of the Romantic School reflects this change, and we feel the spirit of revolt especially, in the poets of that period. Burns' "Scots wha ha'e wi' Wallace bled" and Campbell's "There came to the beach a poor exile of Erin," are outstanding examples. A study of the mutual reaction between literature and its environment is made in the text-books mentioned.

Text-books of French and other literatures are also readily accessible in translation. A perusal of any one of these reveals numerous points of literary contact between us and our neighbours, and by showing the solidarity of literary art, helps to disabuse us of the idea of the insularity of our own civilization.

It is sometimes difficult to decide what to read, but the time spent in a state of indecision before a well-stocked book-case in the selection of a volume is not wasted. One has been rapidly summarizing and comparing the relative merits of the authors represented there—usually old friends. The same remark applies to the period of lingering hesitancy at the bookseller's window before entering to make a purchase. There are many guides to current literature; for instance, "The Literary Notes" in the *Sunday Independent*, which forms a very convenient guide for selection of what is best in the vast output of modern literature—more especially of such literature as pertains to Ireland.

There is a lot to be said for the old Scotsman's preparations to cut the winter's night and make it short. The "ane drink," be it noted, is not an essential ingredient in the prescription, and the schoolmaster of Dunfermline—good master Robert Henryson—though he does not give its dimensions, insists that he took only "ane." Apparently it did not interfere with his studies, for out of that night's reading came inspiration to write a work which keeps his name fresh in the annals of English Literature.



REVIVE THE CELTIC PASTIMES!

The Irish throughout the world are not politically citizens of any single government. They are a race separated by vast distances, and there is a looming peril of separation in character through the influence of environment. This peril can be lessened by perpetuating the traditions of the race. No popular method of preserving racial traditions is more effective than pastimes. Around the Celtic games cling the history of Ireland. Some of these field games are more ancient than any institution now existing. Handball was played in the court of Queen Maeve. Hurling was the people's game in the reign of Brian Boru. If the youth of the Irish race—in America, Australia, South Africa, Ireland, and elsewhere—play the same games, the same mind will move the whole world-divided people toward a common goal. Consanguinity is a strong tie; but the historian knows that nations, like individuals, sometimes hate like brothers. But no people—although under different political institutions, can misunderstand each other when they play the same games. The importance of Celtic pastimes has been stressed by the exhortation of Archbishop Harty of the diocese of Cashel, and the appeal of General O'Duffy at a meeting in Dublin. Their opinion is fortified by the experience of all time.—From *The National Hibernian*.

The Writings of Patrick Pearse.

'Let us now praise men of renown, and our fathers in their generation.' Momentous action by a nation on behalf of its ideals is usually associated in a relationship of mutual influence with a corresponding intellectual movement. The intellectual movement which helped to shape the events culminating in the Easter of 1916 found its broadest expression in the activities of the Gaelic League. The premier literary exponents of this movement were Patrick Pearse and Thomas MacDonagh. With others they will be remembered because they made the supreme sacrifice. In generations to come Pearse will be further remembered as a poet.

Like Davis he concentrated on the spirituality of patriotism. This is the outstanding impression derived from a study of his works. As poet and prose-writer he has produced—in Irish and in English—things destined to live because of this spiritual outlook. He also wrote to meet the national needs of the passing hour—as a propagandist pamphleteer—to send forth the trumpet call and steel men for battle and death. Such works are instinct with a transient appeal to passion, but in their day they served the purpose they were intended to serve.

In all his writings he reveals himself as a personality throbbing with one intense emotion—love of country under God—a parallelism between the patriot-martyr and the Redeemer being constantly suggested. He collected within himself all the manifestations of the Gaelic spirit, ancient and modern, and vivified them with the glow of his own mentality. He saw the instability of national ideals, nay, saw that they were threatened with extinction by advancing Anglicization because of listlessness or active treachery within, and the activity of the enemy without, and finally came to the conclusion that the finger of fate pointed to the need of human sacrifice for the redemption of our Gaelic world.

The evolution of this thought-process is relatively easy to follow in his works. The angelic innocence and happiness of childhood are the predominant feature in "Iosagan" and associated tales. The "Mother and Other Stories" recognises that the realization of the ideals of the Gael is beset by many enemies, and there is a corresponding note of hardness and harshness in this work. This thought progresses steadily through his verse (Lullaby and Lament) until its culmination in the allegorical poem representing Ireland, lonely and infirm, betrayed by her shameful children. His plays and latter poems reflect this view. MacDara, the hero of his play "The Singer" says:—"One man can free a nation as one Man redeemed the world. I will take no pike, I will go into the battle with bare hands, I will stand up before the Gall as Christ hung naked before men on the tree." This refrain, prophetic of his own fate, recurs in his writings. I give one more quotation from this play:—"I seemed to see myself brought to die before a great crowd that stood cold and silent; and there were some that cursed me in their hearts for having brought death into their houses. Sad dead faces seemed to reproach me. Oh! the sad wise faces of the dead! And the keening of women rang in my ears."

I refrain from further quotation. We are heirs to the material change which the spirit of Padraig MacPiarais wrought. We should be the heirs of his spirit. There is no need to despair of the spiritual salvation—in the widest sense of the term—of any one who reads his message. The spirit of "Iosagan" breathes in the Ireland of Pearse's dreams. If the juvenile organization pleaded for in the editorial columns materializes—Pearse's permanent works should form the cultural nucleus of its literature. They will stir up patriotic enthusiasm in the young. There is no desire to bowdlerize his work by suppression of his pamphlets. Pearse's gospel effect on the susceptible mind of youth, should be selected to ensure justice for the intention of the author whose outlook on humanity was one of charity and love.

REVIEWS.

The Army Quarterly—The July number completes Vo. XIV. It contains the winning Military Prize Essay, 1927 (under Captain Bertram Stewart's Bequest) and announces the subject selected for 1928. The 1927 Essay deals with Imperial Defence. Attention is directed to the following extract from the Editorial on the competition:—"It is pleasing to find among the (twelve) competitors a corporal in an infantry Battalion in India." The issue is very comprehensive in its survey of military matters ranging widely in time and space. Needless to say mechanization gets prominence in its pages. There is a résumé of the proceedings of the Preparatory Commission for the Disarmament Conference—which met at Geneva in the spring of this year for its third session. Notes on foreign war books, and reviews and notes of recent books and articles on military subjects are lengthy; the World War supplies the greater part of the subject matter for this section. The general seriousness of the book is relieved by the lighter vein of occasional narrative and reminiscence interlude.

Vol. XIV. contains an extremely interesting article on the Roman Occupation of Britain. References to the expeditionary activities of Ireland during that period throw a momentary flash on the mists of the centuries which are associated with the Craobh Ruadh and the Fianna.

The Journal of the Royal Artillery—July 1927. The bulk of the contents is technical—dealing directly with artillery matters. The "Duncan Silver Medal Essay 1926-27" deals with the changes that artillery organization must undergo to keep abreast of modern progress. Certain aspects of the problem of mechanization figure largely in this interesting Essay. "The Role of the Fortress in Modern War" and "The Maintenance of our Fighting Forces in the Field" are two articles of wider scope, being lectures delivered at the Royal Artillery Institution.

The following extract from "Chasing" may be of interest to Irish readers:—"Punchestown used to be a great hunting ground for soldiers in the days before the Free State came into being, and the Regiment was always well represented. It is some years back since Bradbury's "Sloppy Weather" won there, on the same day as "Covertcoat"—it was a pouring wet day, too. Recent exponents over Punchestown have been Keith Dunn, Jack de Robeck, and I think the last gunner to win a race there was Cavanagh. But unfortunately there is only one race there now to attract soldiers, and until the Punchestown executive reduce the penalties in the Governor-General's Cup it will hardly bring them any entries from this side of the water. It is a pity, for no more sporting meeting exists and there are a large number of amateur riders' races."

Bealoideas the Journal of the Folklore of Ireland Society established in Dublin in January of this year states in the editorial to its first number that it has for its object 'the collection of the traditional folklore of Ireland of which a considerable amount still remains unrecorded, and is fast being lost with the passing of the old people in all parts of the country.' Those who are interested in the study of Irish are in a peculiarly happy position to assist the object of the Society. In our current number a contributor dealing with the question of hobbies specifies the collection of folklore as one outlet for any energy remaining surplus to official demands. It is to be hoped that the Army will give generous support to the Society and furnish its quota of contributions to the pages of its Journal. The first number of *Bealoideas* contains contributions from many whose names are household words in the linguistic and cultural side of our nationality. Professor MacAlister analyses one of the three sorrows of Irish Story-telling, "The Fate of the Children of Tuireann" from the

folk-lore standpoint, and though many may disagree with his gratuitous strictures on Deirdre of the "Fate of the Children of Uisneach" as a literary heroine—all will applaud the erudite case he makes for a survival of the Cult of the Twin Brethren in these tales. Most of the articles are provided with translations in English, and a perusal of the journal affords an opportunity of studying a science which has a cosmopolitan as well as a national appeal, and of maintaining an intimate contact with Irish as a living tongue.

Published half-yearly by the Society at 122A St. Stephen's Green, Dublin. 5/-.

The annual subscription for members of the Society is 7/6d. which entitles them to receive free copies of the Journal for the year in respect of which the fee is paid.

"Travelling Men," by W. G. Dowsley has been described as a fascinating Irish story equal to "Kidnapped." There is a certain similarity in the setting of the two tales—both being laid in Gaelic territory in a period of depression immediately following on the failure of revolt against the common Saxon foe, and each availing of the buoyancy of youth to relieve the prevailing atmosphere of gloom and pessimism.

"Travelling Men" gives us a glimpse of the social conditions that obtained in Ireland in 1816—when the country was sinking in the abyss—the economic spoliation at which the Union aimed being almost complete, whilst all hope of foreign intervention had been abandoned with the overthrow of Napoleon.

Two famous literary men meet in the course of the narrative—Donnchadh Ruadh MacNamara, the furbisher of *Bàn Chnuic Éireann Oigh*, in the blindness of old age, on the brink of death, with his songs and satires and boisterous life behind him, and George Borrow, in boyhood, on the threshold of his quest for adventure and linguistic lore. Those of us who have made the acquaintance of George in the harshness of his later years when his Anti-Papist monomania had fully developed in his gipsy tales will realize that the author of "Travelling Men" has been more just to this essentially lovable character than the autobiographer himself has been. He is here depicted in the softness of boyhood with its generous enthusiasm and impetuosity. In "Lavengro" Captain Borrow is made to say of his son: "He kept very strange company when in Ireland." "Travelling Men" depicts some of the strange company; Donnchadh Ruadh is one of them.

We see the future polyglot colporteur of the Bible Society having his first introduction to a living foreign language in the form of Irish, and we know he never forgot the debt he owed to the same language for its stimulating effect on him. In his later works he is always ready to display his knowledge of Celtic philology, and has ever a kindly word for our native tongue.

There is a lot of wisdom and shrewdness in the remarks of several of the native characters, e.g., "But," says Phil, 'faith, Shorsha, there's no knowing who has the best country; and the patriot isn't the man that *thinks* his own country is the best—for then a patriot and a fool would be the one thing—but the man that wants to make her so and bids her take courage.'"

Moore is momentarily introduced in merry Xmas mood, and we get a close-up view of the notorious Toler, alias Norbury, the hanging judge. While omitting none of the dreadful details of the struggle for existence by the Irish Celt of the time in his own land, the book makes no effort to inflame passion or perpetuate hatred. This enhances its value as a healthy book for boys. One leaves down the volume not with desire to seek revenge for ancient wrongs, but with a firm resolve to prevent the possibility of their recurrence.

Travelling Men. By W. G. Dowsley. Dublin. Talbot Press. 5/-.

THE IRISH WARS. By J. J. O'Connell, M.A. Dublin. Martin Lester, Ltd., 2/6).

This is a military history of Ireland, from the Norse Invasion up to and including 1798. This comprehensive little volume is concerned rather with the wider issues of military policy in the important campaigns in our country than with the analysis of tactics employed in outstanding engagements. The work is primarily of interest to Irish soldiers—but will be found of practical utility to all concerned with the study of our social and economic history. The chapter dealing with the Confederate War merits special attention, in so far as it gives us proper orientation among all the Confederate interests that are sometimes loosely jumbled together and labelled with the common designation—National. The author points out that Owen Roe alone consistently maintained the national outlook, and that the activities of other leaders were entirely controlled by sectarian and foreign political influence. The introductory chapter on the military topography of Ireland is well worth a close study. The volume will certainly enable the ordinary reader to appreciate the significance of many military activities described in the ordinary textbooks of history without any insistence on their topographical significance. The book is well provided with maps, and is gracefully dedicated by the author to his comrades. Incidentally, it may be noted that the author wrote with many years' practical experience of warfare in Ireland.

AN TÓGLACH identifies you. Mention it when purchasing from our advertisers.

Support the advertisers who are supporting AN TÓGLACH.

EASON & SON, LTD.

ARMY PRINTERS, STATIONERS, BOOKSELLERS, NEWSAGENTS.

DUBLIN

LARGE SELECTION OF FANCY GOODS SUITABLE FOR PRESENTS AND PRIZES ALWAYS
IN STOCK.

FOUNTAIN PENS.

PRINTING ORDERS PROMPTLY ATTENDED TO.

BRANCH AT "F" SQUARE, CURRAGH CAMP.

The Sportsman's House



Lounge and Plus Four Suits
from £4 10s. ; Trencher
Waterproof (guar-
anteed)
63/-

Callaghan's
of Dame Street

.....
T. J. Callaghan & Co., Ltd.
12-16 Dame Street, Dublin.
.....