Physical and Strategic Geography of the Adriatic

Author(s): Commander Roncagli

Source: *The Geographical Journal*, Vol. 53, No. 4 (Apr., 1919), pp. 209-223

Published by: geographicalj

Stable URL: <http://www.jstor.org/stable/1779282>

Accessed: 23-05-2016 00:28 UTC

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The Geographical Journal

Vol. LIII No. 4

April 1919

PHYSICAL AND STRATEGIC GEOGRAPHY OF THE ADRIATIC

Commander Roncagli, Royal Italian Navy

Read at the Meeting of the Society, 10 February 1919.

THE May number of the *Geographical Review*, published by the American Geographical Society of New York, contains an interesting article by the well-known Serbian geographer, Jovan Cvijić, under the title "The Geographical Distribution of the Balkan Peoples," in which some statements are worth special attention. The purpose of the whole article is to demonstrate Serbia's ethnological predominance in the north-western part of the Balkan Peninsula, as far as the Adriatic Sea and northern Albania. The author's fame as a man of science is beyond discussion; yet a general tendency to exaggerate the Serbian ethnological position throughout the whole of the Balkan region is evident.

In proof of this it is sufficient to note that Prof. Cvijić's maps, accompanying his article, show the ethnological boundary between Slav and Italian populations as if it were running through the essentially Italian town of Udine, there mentioned by the quite unknown name of Videm. According to that boundary a large portion of the Italian province of Udine, roughly that part of it lying east of its chief town, appears to be ethnologically Slav. I need not point out that such a statement is wrong, and that the boundary-line, as drawn in the map by the Serbian geographer, lies too far west. But, having spent a good deal of time, some thirty years ago, travelling in the province of Udine, and surveying geometrically a great part of it, I think I can bring forward personal evidence which will prove to be of some value.

That some Slav people have been living for centuries somewhere on the western slopes of the Julian Alps, that is to say, on the Italian side of the pre-war Austro-Italian frontier, nobody would deny; yet I may state that no Slav group, either large or small, ever fixed its residence in the plains of that Italian province. The whole of the Slav population under Italian political control has always lived, and still lives, close to the pre-war political boundary, a long way to the north-east of the town of Udine. Further, I may state that Slav people living in that part of the Italian province have been real Italians from time immemorial. As a matter of

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fact, though still using the Slav dialect in their family circles, they speak both the Italian language and the Venetian dialect, perform all duties as other Italian citizens, and serve in the Italian army as all other Italians do. The army that won the battles of the Piave in July and October last had soldiers recruited from amongst them, and many of these soldiers died in our lines, fighting regularly against Austrians, Magyars, and Croats, side by side with the other Italian soldiers.

But this is not the subject I want to deal with in this lecture. I wish rather to draw your attention to some peculiar statements that can be read in Prof. Cvijić's article concerning the physical geography of the Adriatic.

In treating of what he calls "The Northern Contact Zone of the Yugo-Slavs," the distinguished Serbian geographer says: "Numerous Italian writers have attempted, during the present war, to show that the natural frontiers of Italy on the east are not the well-known frontiers of the Appennine Peninsula. These natural frontiers, so say these writers, include part of the Balkan Peninsula as far as the division between the Adriatic drainage and that of the Save, so that a large part of the Dinaric region as far as the highest range, would, from the geographical and natural point of view, belong to Italy." And further on:

"It is hardly necessary to repeat here the results of the fundamental and well-known geographical and geological investigations concerning the region; that is to say, that the Karst and the Dinaric system are integral parts of the Balkan Peninsula and that the natural boundaries of a peninsula like that of Italy cannot be sought for on the eastern side of the Adriatic. It is very clear, even to an untrained observer, that this sea marks the natural boundary between the Balkan and Italian peninsulas."

Taking these statements as fundamental from Prof. Cvijić's point of view, let us examine them as carefully as possible, in order to ascertain both their scientific value and the reasons that led the author to adopt them. But before doing this we shall ascertain what "the results of the fundamental and well-known geographical and geological investigations," to which the Serbian geographer is referring, really are.

German geographers have long ago tried to make physical geography one of the moral weapons with which Germany prepared to carry out her plans of dominating the world. We must acknowledge that they have worked a good deal in that direction, and also that they have partially succeeded.

One of the methods adopted by them is that of bringing geographical morphology to interfere in human and social facts beyond all reasonable limit. The German method of considering morphological units by themselves as isolated from one another by natural lines can be entirely accepted. Morphology, as far as it deals with the forms and features of

the landscape alone, is of a descriptive character. In order to give the description of the land the most effective power, and allow students to easily distinguish morphological types from one another, morphology acts in a somewhat geometrical style. We must, therefore, recognize that the method as it is could not be better, it being nearly an exact one in a mathematical sense. But German geographers have gone much farther. Some of them have employed mere physical theories, not only to account for the evolution of facts of a human and social character, which, to a certain point, ought to be done, but to deprive such facts of any value with regard to the political conditions of the territories concerned. This has been done especially in regard to the Alpine system. Some German geographers, using with great skill the scientific weapon they had prepared, succeeded, to a certain extent, in inducing students to give no longer any value to the Alpine watershed as the natural boundary of the states situated on both sides of the chain. By propounding the scientific necessity of not breaking up the compactness of a well-defined mountainous body, either from a mere morphological point of view or from a more general one, they attempted to deprive of any value the fact that in the past the watershed of a chain of mountains had been taken as a most convenient natural boundary by generations of geographers. Taking their stand on their new theory, almost exclusively or mainly morphological, they would pay no attention as to whether on one side of the watershed human life is of quite a different character from that on the other. They would not take into consideration social and historical facts, such as the names of mountains, valleys, towns, and villages as testimonials of an existing nationality, or of its having existed long before being driven away by invaders. Furthermore, they would give or refuse to give importance to natural facts, such as the botanic and faunistic characteristics of a given region, according to the political thesis they ought to support. They would, in a word, force upon students the conviction that such great natural facts as lofty chains of mountains, wide streams, etc., are not natural boundaries between states, unless they happen to be in accordance with the momentary political conveniences that ought to be supported. Their simple and most imperative natural evidence should be accepted or repudiated according to political circumstances.

I need not waste words to point out how far such proceedings are from being correct. Obviously a natural boundary ought to provide above all for the security of the states living on both sides. But this was not, of course, the starting-point of German geographers, as they wanted to facilitate as far as possible Germany's aggressive programme. Consequently they attempted to suppress the very laws of Nature, whenever they thought it useful to do so, by superimposing on them their own scientific sophisms. I beg the audience to forgive me for being so little respectful to science as apparently to admit that sophistry may be scientific, even when it is German.

The head of this school, which I would ask permission to call "futuristic geography," is the leader of German geographers, Prof. Albrecht Penck. Only for this reason, if not for the sake of argument, we should pay great attention to the new theory. But the latest inferences which he drew from it, and to which I believe Prof. Cvijić is referring, are such as to admit of no hesitation in repelling them. At the outbreak of the war Prof. Penck found himself in Australia, and was detained in London by the British authorities. Some months later he succeeded in obtaining leave to return to Germany, and I think I am not wrong in saying that the Italian authorities did their share in preserving science from the great damage she would have incurred had she been deprived for some time of such a luminary.

As soon as he returned home the German geographer thought it advisable to publish a pamphlet on the Austrian Alpine boundary (Albrecht Penck, *Die Oesterreichische Alpengrenze*, mit einer Karte. Stuttgart: Engelhorn, 1916), in which all German theories, especially morphological, were brought into play, with a view to prove what both Germany and Austria wanted to be proved, in order to support their political and eventually territorial aims. Of course, having to follow these political lines, the watershed of the Alpine system was by no means acceptable as a natural frontier. Then the author carefully examined the southern side of the mountains, gathering what he thought to be useful to support his rather oscillating construction. Thus, having crossed the watershed, he went directly south in search of what he believed to be the natural boundary between Central and Southern Europe. For Prof. Penck has written as follows: "The Alps rise very high to form an important division in Europe. They divide Central from Southern Europe, the region of the dark fir tree from that of the olive tree, the region of the Germans from that of the Italians." You will easily realize that the German geographer had to walk a long way south of the Alpine watershed, descending the sloping land, before reaching the line dividing the olive from the fir tree. He found it, naturally, where he wanted to find it, and concluded that the natural boundary between Central and Southern Europe, that is to say, between Austria and Italy, is at the foot of the southern slopes. A few steps further on and he would have concluded that the boundary-line is the river Po itself.

This reference to German theory, and particularly to Prof. Penck's, may appear to be of a digressive character, but in reality it is not so. This theory has been followed more or less by Prof. Cvijić in dealing with the Balkan and Italian peninsulas, and he has duly adapted it to the new boundary in question. This I am going to explain as briefly as possible.

That Prof. Cvijić takes the Adriatic to be "the natural boundary between the Balkan and the Italian peninsulas" is, or appears to be, but a consequence of the German theories we have just roughly discussed ;

but it is easy to show that such theories are utterly illogical when applied to political discussions, even if they were not so from a scientific point of view. Prof. Cvijić himself leads me, as straight as I could wish, to make this examination and refutation of his theories.

Let us suppose that he is right in taking the Adriatic to be the natural boundary between the two peninsulas. As far as political boundaries are concerned, a wide sea is rather too big a thing to be accepted as a boundary without any further definition. We shall, therefore, search for a real geometrical line within the natural limits of the Adriatic, to act as boundary-line, and this line should be such as to duly fulfil the functions of a practical political frontier. Obviously there is no reason why we should recognize either of the coast-lines of the Adriatic—eastern or western—as actually representing that frontier. Therefore we shall conclude that the only line duly representing the natural boundary between the Italian and the Balkan peninsulas is a line running midway between the two opposite shores of the Adriatic. This is, after all, what even Yugo-Slav cartographers have laid down in their maps.

Let us now follow this line in a north-westerly direction. Evidently there must be a point at which it reaches the coast. Then two very important questions arise, strictly bound to one another by the law of logical reasoning.

1. Where is the landing point of that line to be found so as to harmonize with natural laws?
2. Supposing the line we are following to be the actual representative of the natural boundary between the Italian and Balkan peninsulas, there is no reason why it should finish where it reaches the land. Therefore, it being necessarily admitted that it shall continue overland, what will be its direction further on?

Addressing geographers, I need not waste words in saying that we cannot admit of two different theories on natural boundaries to be equally applicable, one for land boundary-lines, the other for sea ones. Obviously a single law ought to rule in both cases, for the laws of Nature are general and do not change abruptly with the change of places. We must, therefore, conclude that the point where the natural boundary between the Balkan and the Italian peninsulas, according to Prof. Cvijić's theory, shall reach the land is the mouth of the River Po, and that it cannot be another one. Why that?

Geographers have long ago accepted, as a result of careful investigation, the conclusion that in earlier geological ages Northern Adriatic extended far more inland in a westerly direction than it does at present. It is generally admitted that during the Pliocene period it covered the greatest part of the plains now drained by the hydrographic system of the River Po, extending more or less as far as Turin, and practically reaching the foot of the Alps and the Appennines.

Then we must draw the consequence that Prof. Cvijić's natural

boundary-line, between the Italian and Balkanic peninsulas, in its overland route, so to say, ought to follow the axis of the River Po itself as far as its source. The River Po is the real survivor of what in past ages was the axis of the westernmost gulf of the Adriatic; and as such it is fully entitled to act as the only legitimate representative of this sea overland, as far as the foot of the western section of the Italian Alps.

What then? As the sea-section of Prof. Cvijić's line would separate the Italian Peninsula from the Balkans, there is no scientific reason

I. The Adriatic Sea in the Pliocene age

II. Presumed extension of the Plain of the Po in the Quaternary age

why its land-section should not separate some other thing. Therefore, as there is no Balkan region north of the River Po, we ought to conclude that the land-section of Prof. Cvijić's line, namely the River Po, is the natural boundary between the Italian Peninsula and Central Europe. I do not believe the prominent Serbian geographer would admit this conclusion, yet it is strictly logical, and in striking agreement with Prof. Penck's theory, just briefly referred to. According to this theory Italy's territory, stretching as far north of the River Po as the watershed of the Alps, should be recognized as an integral part of Central Europe from a natural point of view. Moreover, by simply

giving Penck's theory a slight amplification, it would be easy to conclude that the southern slope of the Alps east of the Stelvio Pass is not Italian but Italianized German territory; that west of the Stelvio Pass it is Italianized Swiss territory, and so on. Evidently this is more than Prof. Penck himself wanted to prove in his paper of 1916, and I need not explain that it is scientifically baseless.

As a matter of fact Yugo-Slav cartographers have designed the natural boundary between the Italian and Balkan peninsulas as if its landing point were at the mouth of the River Isonzo. Why the Isonzo and not another of the many rivers that flow from the Eastern Alps into the Adriatic? To a certain extent it would be logical to prefer that river if it had to be adopted as a natural boundary between the two peninsulas north of the Adriatic. It would be logical to do so on account of the fact that Prof. Cvijic takes the Karst to be an integral part of the Balkan Peninsula, and the Isonzo is the western natural boundary of the Karst. But in reality the Yugo-Slav cartographers do not use that river as a boundary except for a small portion above its mouth. Then they follow a more westerly line which has nothing to do with natural geography, and only represents the western limit of the Yugo-Slav political aspirations. This new line, indeed, would include in the so-called Yugo-Slav territory that part of the Italian province of Udine in which, as I already said, Slav populations have been living for centuries and are now completely Italianized.

Now we must deal with another part of Prof. Cvijic's statements, from which you will gather that the prominent Serbian geographer, although following, perhaps unwillingly, Penck's theory in regard to the Alps, does no longer follow it in regard to the Dinaric Alps. As a matter of fact, in stating that the natural boundary between the Italian and the German region is at the foot of the southern Alpine slope, the great German geographer has been guided by a fundamental conception, which is quite opposite to Cvijic's, as regards the Dinaric system. Prof. Penck has based his theory mainly on the division of the fir-tree region from the olive-tree one—thus giving an utterly exaggerated importance to differences in floral characteristics between different parts of the same natural region. On the contrary Prof. Cvijic, by roughly saying that the Adriatic Sea is the natural boundary between the Italian and Balkan peninsulas, pays no attention to either the botanic or the faunistic characteristics of the region extending west of the watershed of the Dinaric Alps. Moreover, by stating that this region is an integral part of the Balkan Peninsula, he more precisely goes against Penck's theory. In fact it is well known that the flora of the Dalmatian region is almost exclusively Mediterranean, not Pontic, as that of the Balkan Peninsula, and that traces of Balkan flora are to be found only at high altitudes in a small part of higher continental Dalmatia, as well as

somewhere in the Appennines at high altitudes. This means that in early geological ages only those high lands were emergent from the sea-level, just as the Balkan highland was. Traces of Balkan flora in a small part of continental Dalmatia do no more entitle geographers to state that Dalmatia is a Balkan region than similar traces in the Appennines would entitle them to state that the Appennines too are a Balkan region. So with regard to faunistic characters, geographers know that the Dinaric Alps act as a natural boundary between the two regions stretching east and west of them.

Still we should consider some geological facts to which Prof. Cvijić

The geological affinity between the coasts of Italy and Dalmatia

seems to have paid no attention in tracing his boundary. I would point out the fact that some high lands on the eastern shore of the Italian peninsula, such as Mount Conero near Ancona, the Gargano Group, and the Apulian Plateau, belong to the Dalmatian geological system. I do not believe that the prominent Serbian geographer would state that such high lands are not politically Italian, because they are geologically Balkan, so much the less as from a geological point of view Dalmatia and its archipelagoes are as little Balkan as the Italian peninsula itself.

I think we can now come to a final conclusion. A glance at a map is sufficient to make one realize that the whole area included within the

watershed of the Appennines, the Alps, the Velebit, and the Dinaric Alps is a single great geographical unit. The boundary-line that I have so roughly traced presents no discontinuity whatever. The main natural characters of the whole region are, with few exceptions, Mediterranean. All its rivers flow into the Adriatic; and, as regards its northern and eastern boundary, I hope I have said quite enough to show how far certain theories are, not only from scientific evidence, which is not always comprehensible to all, but from reality, which is far better understood under the guide of common sense. Let us keep science outside of non-scientific influences; then we shall be allowed to take advantage of her in any branch of human activity. Politics, as one of these branches, can find in science great support provided that they do not discredit her by intruding within her sphere.

Let us now quote another paragraph from Prof. Cvijić's article, which will lead me directly into the field of strategic geography. I need not explain here that this branch of geographical knowledge is only a special interpretation of geographical facts, both physical and social, concerning a region which is, or is likely to become, the theatre of a war. I said "a special interpretation" because such facts ought to be considered from a particular point of view, that is to say, in order to take advantage of them as far as possible for all war needs.

Now the Serbian geographer says: "The strategic security of Italy constitutes a political and military problem which can be solved on this basis, but which has nothing to do with scientific investigations." What he believes to be a basis for this solution of the problem concerned is the acceptance of Dalmatia as an integral part of the Balkan Peninsula.

I quite agree with him in acknowledging that so far as the question is whether Dalmatia is merely Italian or Balkan from a physical point of view, Italy's strategic problem in the Adriatic has no concern in it. But the question of Italy's naval security in that sea is a quite different one, and I do not want to discuss it in this lecture. I only want to point out, in a few notes, the wonderful military work that Nature has done on behalf of the eastern coast, and how far this work of Nature can be used both for defensive or offensive naval purposes in regard to the Italian shore.

As a matter of fact it is in the power of the state which rules over Dalmatia to render its sea labyrinths absolutely inaccessible to the enemy's ships, and to turn them into so many inviolable centres for lying in wait, to spy on and ensnare those on the opposite coast. On the contrary, on the Italian coast no art, science, or technical skill can succeed in raising anything whatsoever that could afford defensive importance to the monotonous uniformity of the flat shores, utterly wanting everywhere in any natural defence. Therefore we ought to conclude that by the mere fact of possessing the eastern coast any Power that was

hostile to Italy would hold in its hands the most formidable means of dominating her.

I need not waste more words in explaining why, in the military problem of the Adriatic, the territory of Dalmatia is of the utmost importance; but, in order to view the problem in its proper light, we cannot study Dalmatia and its islands except as a continuation of Istria, and of the islands that, geographically speaking, belong to it.

From the Quarnero to the Bocche di Cattaro, this territory presents itself as constituted of two parts clearly distinct as regards their different value in naval warfare. A dividing line might be traced, more or less, to the south of Spalato, so as to leave the islands of Brazza, Lesina, Lissa, Curzola, and the smaller ones of this group to the south. This is not an artificial division; it is a real morphological division founded principally on the horizontal configuration both of the mainland and of the archipelagoes in front of it.

To the north of that line the principal continental block of land is to be found, as well as an archipelago of numberless islands. These islands, as a whole, and with the numerous maritime channels they enclose, constitute an oro-hydrographical system, having two most typical characters: (1) the parallelism of the coast-lines, both between themselves and in regard to the Dinaric Alps; (2) the minute insular breaking up. The curve of the Dalmatian coast from Spalato to the island of Pago, and the more accentuated one of the Liburnian arch, from the end of the Canale della Morlacca to Fiume, are both strictly followed by the chains of islands that run along them, including numerous channels all parallel to one another and practically closed westwards.

To the south of this line the coast is much less indented, and the insular breaking-up less pronounced. The islands are few, and they are nearly all large, with wide open channels between them, and above all no longer strictly parallel to the coast, but in a curve which detaches itself from the mainland near Ragusa and turns definitely towards the Italian coast, more or less in the direction of the Garganic region.

Following the coast upwards from Spalato to the Quarnero, and penetrating into the archipelagoes, beyond the marvellous natural ports of Spalato, Traù, and Sebenico, to mention only the principal ones, there is no channel between the islands or roadstead or gulf that opens into the high coast of these or of the mainland in which a ship could not be sheltered from bad weather and out of sight of the enemy. Moreover, ships of all sizes can sail along inside channels the whole way between Punta Planca and Fiume, that is to say, over 140 miles. Better conditions could not be hoped for, either for the purpose of escaping pursuit or for manœuvring according to the movements of an enemy cruising outside the insular barriers, and in case of need, getting out to sea by one of the many passages between the islands, choosing the outlet according

to the best convenience of the moment. And there is no gulf, bay, or creek, small though it may be, where dépôts, works, hangars and buildings of all kinds for the use of the Navy cannot be erected. I do not hesitate to say that in all the Mediterranean there is not another place that can furnish so many excellent characteristics distributed with a nearly perfect uniformity over so extensive a sea area.

On the other hand, south of Spalato the military importance of the anchorages and other positions is greatly diminished, on account of the smaller number and different situation of the islands, and of the channels being much wider and running in a quite different direction. Whilst in the northern zone the principal channels have their openings to the north-west and the south-east, that is to say, on lines parallel to the principal axis of the Adriatic, in the southern one the channels open straight out to the west, that is, to the open sea. This condition, together with their wider openings, is no doubt less favourable for hiding the movements of a naval force.

We have not taken into consideration the depth of the sea, because in both zones any ship can safely sail whatever her draught of water may be. There are very few spots where an elevation of the submarine floor forms a dangerous bank ; and the few existing obstacles of this kind are all well known.

It will be well, however, to consider more attentively the characteristic of vertical morphology, because this proves that in all the great Istrian-Dalmatian archipelago, nearly as far as Ragusa, there is no land emerging from the sea that cannot serve as a screen for any ship whatsoever, thanks to its elevation. To mention only a few of the lowest islands, there is the small but now glorious Premuda (270 feet), acting as outer edge to the Selve channel, and there are Selve (240 feet) and Ulbo (216 feet), which have the additional advantage that one of these islands hides the other from the view of any observer on the open sea. And whilst the extreme point of the island of Cherso is only 150 feet in height—sufficient to hide ships coasting on the eastern side—there is Lussin, rising up in front of it, with elevations that vary from 1800 feet at the northern extremity to little more than 300 feet at the south. Lussin, which, with Asinello to the south, forms the other dyke closing the Selve passage to the north, appears to have been purposely placed there by Nature so as to continue with Cherso the strategic and tactical defence of the Quarnerolo.

This example is one of thousands that could be mentioned in describing the marvellous military works done by Nature along the eastern side of the Adriatic. There is hardly any point out at sea, approximately between Punta Planca and Cape Promontore, from where the eye of an observer, placed no higher than the top of an ordinary mast of a big ship, can penetrate beyond the outside barrier of islands. Only aerial exploration, when practicable, can penetrate inside these natural barriers.

One must not conclude, however, that in the southern zone, between

Cattaro. 1/500,000

Valona Bay. 1/500,000

Pola. 1/200,000

Dalmatian and Italian Harbours, with three and five fathom lines, to show size and depth of former in comparison with latter

Note that even at Zara, where the coast is not so steep as in other Dalmatian harbours, the five-fathom line runs close to the inner water-front, while at Brindisi it is broken by shallow water, and at Otrando does not approach the shore

Zara. 1/50,000

Otranto. 1/50,000

Spalato and Cattaro, similar characteristics are not to be met. The difference between the two zones consists in this, that these characteristics are less accentuated in the south, and as to the possibility of hiding from outside view the movements of ships manœuvring in the inner channels, they are totally wanting. With this description, which one might draw out indefinitely without being obliged to modify it in any substantial way, we have placed in a perfectly clear light the great and singular military value of the eastern shore of the Adriatic.

Taken as a whole the western shore, when compared with the eastern one, might well be called a cruel joke of Nature. From the pre-war boundary, as far as the Cape of Santa Maria di Leuca, it consists of a

Brindisi. 1/100,000

uniform line, without a break inland, with hardly any relief to interrupt the monotony of its conformation. Mount Conero of Ancona, the Gargano, and the tableland of the Puglie, reliefs which, as we have already pointed out, belong geologically to Dalmatia, have none of the magnificent characteristics of the horizontal morphology of the opposite shore. The gulf of Manfredonia is too wide and open to be of any military importance. The only exception is the small break at Brindisi, in a most excentric position with regard to the Adriatic basin, and with insignificant military characteristics. All along this shore there is not a single island, with the exception of the small and, as regards military purposes, almost useless group of the Tremiti. There is not even one of those grand subaqueous archipelagoes that in other geographical regions constitute formidable means of natural defence, not even a sandbank—nothing. Everywhere

open shores, upon which the sea breaks, but where, so long as northerly winds are not blowing or the scirocco is not too strong, any kind of ship can always approach near enough to carry out operations of war. I do not even speak of the facilities for landing. So long as the weather is not too bad, any one can land wherever he likes.

But almost as if these conditions of military inferiority, as regards the opposite shore, did not suffice, Nature has done her best to accentuate them in every way. For instance, both shores run in a somewhat north-west to south-east direction. Then, taking into consideration the distance between the two shores and the speed of modern ships, it happens that an expedition which leaves the eastern coast during the night to carry out any kind of surprise action against the western shore, on arriving just before dawn in view of the mainland, will always have the sun at its back, thereby finding itself in the best possible position for action. On the contrary, an expedition that would call from the Italian shore for a similar object, to carry out which it would be necessary to await daylight, would always have the sun in its face, and would thus be placed in the worst possible conditions from this point of view.

Furthermore, during north-easterly winds—which prevail especially in winter—the sea remains sufficiently calm all along the eastern coast. On the contrary, along the western one, navigation often becomes dangerous, if not altogether impossible. Off the Dalmatian coast the depth of the sea everywhere causes great difficulties to be met with in dropping mines, whilst shallow waters everywhere along the Italian coast make it very easy for the enemy to do so. On the other hand, the Italian side of the water is always more or less muddy, so that Italian aircraft cannot easily succeed in detecting mines laid by the enemy. On the contrary, off the Dalmatian coast the water is nearly always limpid, so that the enemy can easily discover and remove at once any mines laid there. Finally, the direction of the currents gives the enemy excellent facilities to send drifting mines to the western shore, whilst from the western shore one cannot do the same against him. Considering these natural facts, nothing more is wanting to convince us that the Italian peninsula has been unfairly handicapped by Nature on its Adriatic side.

This brief description of the comparative morphological characters of the opposite shores seems to me to be quite sufficient to draw the following conclusion as to the possibility for Italy to provide for her strategical security in the Adriatic Sea. As far as the eastern coast belongs to some other power, Italy has no geographical basis whatever in that sea upon which she might raise a defensive system.

Concerning this point Prof. Cvijić's opinion appears to be quite different. As a matter of fact he has stated that Italy can solve the problem of her security in the Adriatic without extending her political rule east of the axis of that sea. But statements not supported by proofs

are mere opinions. I have just brought forward a few of the many arguments which go to prove that Italy cannot provide for her security unless she possesses proper positions on the eastern shore. I think it is now Prof. Cvijić's turn to give his statement concerning Italy's security the necessary support.

I hope I have given you at least a rough idea of what I believe to be the true state of things in regard to some geographical questions concerning the Adriatic region. Much of the attention of the public has been drawn to them in consequence of the war, and it is only a matter of course whether some of what has been written or said is not in due accordance with the laws of science and of logic. As far as science is taken as an adviser in political transactions, it may be expected that the conclusions drawn therefrom will be of a satisfactory character. On the contrary, whenever non-scientific influences are forced upon science, one can scarcely think of any satisfactory result to be arrived at in political controversies.

Before the paper the PRESIDENT said : At a time like this, when there are so many problems before the Peace Conference which involve more or less of geographical issues, it seems to me quite right that we, the Geographical Society, should consider some of those problems for ourselves. I think we need hardly apply to them the strict technical idea of geography as representing morphology, or the conformations of land and sea on the surface of the world, but we may include such considerations as may be either military or commercial, or even political, so long as we do not wander too far into the realms of politics. To-night the subject before us is the Adriatic, and of all the problems which confront us now I think this perhaps is one of the most important. We are fortunate in having secured one of the best exponents of the geography of the Adriatic that is to be found in Europe. Commander Roncagli who will address us, after serving in the Italian Navy had retired, and had been for many years Secretary of the Geographical Society at Rome. At the outbreak of war he returned to the Navy, and he has seen much service in the Adriatic. We may therefore welcome him in the double capacity of a distinguished Naval officer and as secretary of a sister society.

(Commander Roncagli then read the paper printed above, and a discussion followed.)

The PRESIDENT : We are fortunate in having amongst us to-night Colonel Longmore, who was one of the first four British Naval officers to learn the art of flying. He has been associated from its infancy with the Royal Naval Air Service. For a long while he commanded the British Air Squadron co-operating with the Italians in the Adriatic, and he will show us some pictures of Dalmatian ports taken from a comparatively new point of view and under very special circumstances.

Colonel LONGMORE, R.A.F. : I have listened with great interest to Commander Roncagli's lecture, especially as we were on such good terms with the Italian Navy. The Adriatic Group of the R.A.F. had the pleasure of serving under the command of Admiral Cusani, whose headquarters were at Brindisi. The part of the coast with which we were mostly concerned was between Cattaro and Valona on the eastern side, and between Cape Gargano and Cape