

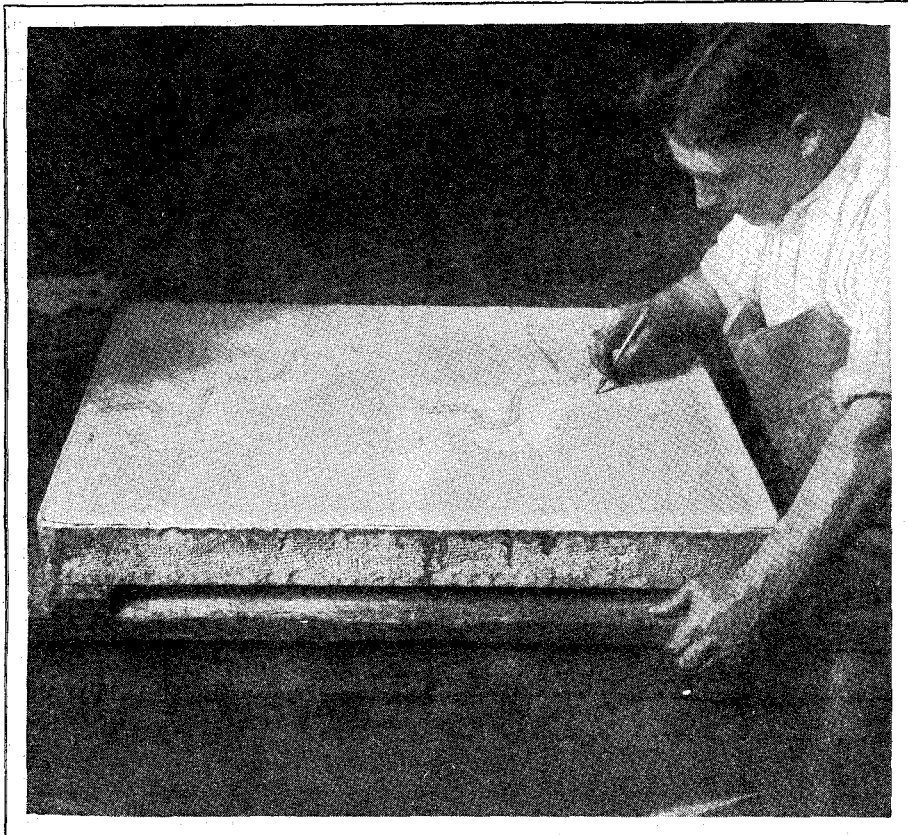
World War intervened to prevent it, and the matter of a World Court was left in abeyance until the end of the war. Then it was taken up at the Congress of Versailles and a detailed scheme was adopted as a part of the Covenant of the League of Nations.

Upon the basis thus provided the existing Permanent Court of International Justice came into existence and is now operating; and to it the United States is now asked to adhere. It is one of the most curious of circumstances that the League of Nations

should thus have established a Court the original suggestion of which is clearly to be traced back a quarter of a century to a writing of a man who is now one of the League's most unfavorable critics and strongest opponents.

PUTTING THE UNITED STATES ON THE MAP

BY CHARLES FITZHUGH TALMAN



TOPOGRAPHIC MAPS AS TRANSFERRED FROM COPPER PLATE TO LITHOGRAPHIC STONE

MAPS, like dictionaries, are never really finished, and some maps, like some dictionaries, are marvelously slow in the making.

In the year 1875 the French began to compile a new edition of the famous *Dictionnaire de l'Académie*. This work has now progressed as far as the letter J, and at the present rate will reach the end of the alphabet by the year 1993—by which time most of it will be out of date. The United States Government began in the early eighties of the last century to make a detailed topographic map of this country; such a map as all but the most backward nations of Europe had already made for their respective territories and were keeping fairly up to date by means of frequent revision. This map has now covered barely two-fifths of the continental area of the United States, exclusive of Alaska. By the time it has been published for the whole country, unless the work is much accelerated, nobody now living will be interested in terrestrial topog-

raphy. Moreover, much of this map now extant is already far behind the times with respect to such details as railways, highways, and other works of man.

Laggard lexicography has not appreciably impaired the prosperity of the French people. Deficient cartography, on the other hand, costs the citizens of the United States tens of millions of dollars every year. Since many of them are serenely unaware of this calamity, it seems advisable to set forth the facts.

TWO KINDS OF MAP

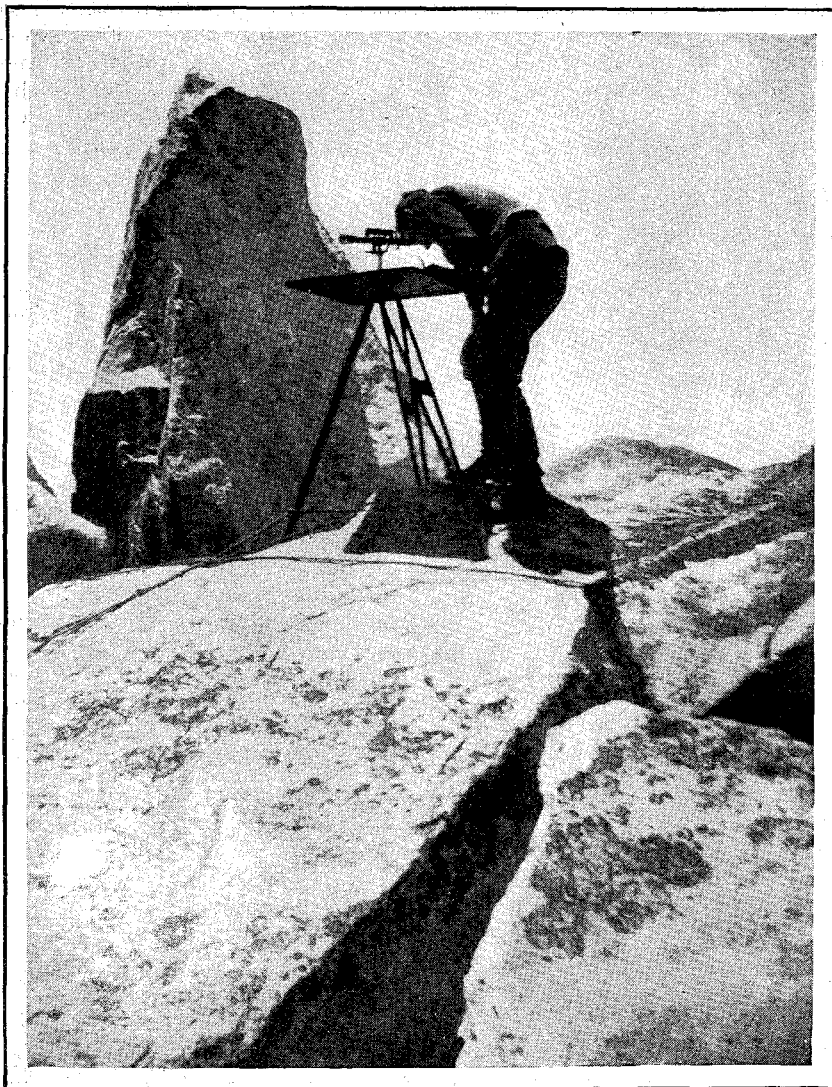
Maps of various sorts have been made by many branches of the Federal Government and by State and local authorities, as well as by unofficial cartographers, but all the detailed maps covering extensive areas of the country fall into two broad classes. The first is typified in the Land Office maps, which show, with various degrees of accuracy, the horizontal dis-

tribution of geographic features, but largely ignore the relief of the land. This style of map, though of very limited value, has hitherto been much the more prevalent of the two, and is the only one with which a large part of our population is at all familiar. The other kind of map gives definite information concerning vertical as well as horizontal features, and, as made on a National scale by the United States Geological Survey, with the cooperation of the Coast and Geodetic Survey and several other official agencies, also indicates geographical positions with scientific accuracy. It is the style of map represented abroad by the Ordnance Survey maps of Great Britain, for example, and corresponds to a multitude of requirements of modern civilized life—administrative, military, industrial, commercial, and scientific.

The horizontal mapping of the country west of the original States was a task undertaken by the Government shortly after the Revolutionary War and carried out with great energy. The survey of the Northwest Territory, begun by Thomas Hutchins, geographer of the United States, in the year 1786, in accordance with plans laid down by Thomas Jefferson, and the later surveys of the Land Office extending to the Pacific coast, and still in progress, constitute a gigantic cartographic feat, the results of which have answered very well to the immediate necessity of opening the virgin lands to settlement. The system of primary meridians and base lines, townships, and sections adopted in this great land survey served to fix the boundary of farms, and eventually of many States and other political divisions. However, much of the Land Office surveying, which until recently was let out by contract and not performed by Government employees, has necessarily been crude and hasty, and, as we have stated, the measurement of elevations does not enter into its programme.

WHY WE NEED TOPOGRAPHIC MAPS

The distinctive feature of a topographic map is that it shows the ups and downs of a country as accurately



ALL IN THE DAY'S WORK

Former Chief Geographer Marshall, of the United States Geological Survey, taking a sight from the summit of Post Peak, in Yosemite National Park. The instrument had to be lashed to the rocks to keep it from blowing away

as it does the horizontal details, or as nearly so as the scale of the map permits. On the maps found in ordinary atlases and school geographies elevations are indicated very roughly by means of hatchings, shadings, or tints, but the topographic map furnishes precise information on this subject by means of so-called contour lines, or contours. These lines are drawn through points of equal altitude, and their vertical intervals depend somewhat upon the character of the country. In a relatively flat region contours may be drawn for every ten feet of altitude, while in a mountainous country larger intervals—perhaps one hundred or two hundred feet—are necessary in order to avoid excessive crowding of the lines.

A clear idea of the meaning of contours can be obtained by imagining the valleys shown on a map to be filled gradually with water. The contours correspond to the successive shore lines for each ten feet (or other uniform interval) in the rise of the water.

A topographic map is one of the prerequisites of many engineering un-

dertakings. In planning a railway, for example, the question of grade is a vital consideration. Long detours are made to avoid excessive hill climbing or the alternative of expensive cuts and fills. Where the topography of the country has not already been mapped the railway builders must map it themselves, at great expense. An accurate knowledge of topography is likewise necessary to the planning of water supply, irrigation and drainage systems, the location of canals and highways, the control of floods, the prospecting of oil fields and mineral lands, and a variety of other enterprises. The topographic maps that the United States Geological Survey is gradually making for all parts of the country are sold to the public at ten cents a sheet. Engineers tell us that in many instances one of these sheets furnishes information that would cost them months of labor and thousands of dollars to procure without it.

Others besides engineers find these maps valuable and are more or less seriously inconvenienced by the lack of them for many parts of the coun-

try. Motoring, post-route mapping, soil mapping, forestry, land valuation and classification, town planning, and a wide range of scientific investigations are some of the activities that benefit by the existence of good topographic maps.

MAKING A TOPOGRAPHIC ATLAS

The slowness with which the Government is producing what is called the "Topographic Atlas of the United States" is only relative. In an absolute sense an enormous sum total of work is accomplished every year.

About 3,000 separate sheets of this "atlas" have already been issued, and something like a million copies are distributed annually, of which about 700,000 copies are sold and the remainder are supplied free to Government offices and other official agencies. The sheets are, with few exceptions, of uniform size—about 17 by 20 inches—though they are not all made on the same scale. The commonest scale is approximately one mile to the inch, and a sheet made on this scale represents an area of 230 square miles. A single map of the whole country made on the same scale would cover about an acre.

The mapping has been very unevenly distributed among the States. It is complete for Connecticut, Delaware, Maryland, Massachusetts, New Jersey, Ohio, Rhode Island, and West Virginia. In these States and some of the others the State authorities have aided the Federal Government in the production of the map. On the other hand, very fragmentary mapping has been done in Florida, Minnesota, and Mississippi.

All the more densely populated regions of the country have been mapped, yet it is probably true that a majority of the people living in these regions, outside of the engineering profession, do not know that such maps exist. A mercantile firm in Chillicothe, Ohio, which buys copies of the map for that vicinity in quantity and gives them away to its farmer customers, has written to the Geological Survey of the surprise and pleasure with which a farmer discovers that his own house is actually shown on this map. Comparatively few booksellers handle the Government maps. Some years ago an attempt was made to popularize these maps by placing them on sale at rural post offices, but for some inscrutable reason the undertaking proved a complete failure.

The field work that lies back of the topographic maps is often of the most arduous character. There are upward of four hundred topographers employed in this work, and it is estimated that these men have, in the aggregate, trudged something like nine million miles, carrying heavy

instruments, equipment, and supplies, to execute the surveying thus far accomplished. Perilous mountaineering, wading through swamps, shooting rapids, encounters with snakes and wild beasts—such are some of the items in the day's work of a Government topographic engineer. The maps are all actually drawn in the field, though they undergo a certain amount of refinement at the hands of skillful engravers in Washington before they go to press.

A beginning has recently been made in the use of aerial photography in the construction of these maps, though as a strictly auxiliary process. There is no prospect at present that pictures taken from aircraft will ever wholly, or even largely, replace the older methods of map-making. Such pictures cannot be used to determine relief, and they have certain other inherent defects. Their most important use is in bringing old maps up to date by showing changes in the man-made features of the landscape.

So far as the accurate fixing of geographic positions and elevations is

concerned, the Geological Survey map-makers are dependent to a large extent upon the system of horizontal and vertical "control" furnished by the Coast and Geodetic Survey. This institution has been engaged for years in extending over the country a vast network of triangulation and precise leveling, providing accurate reference points upon which to base local surveys. As has been aptly remarked in a recent official report, this geodetic network plays much the same part in the mapping of the country that the steel framework does in the construction of a big office building.

The Army engineers, the Forest Service, the Reclamation Service, the Mississippi River Commission, and the Lake Survey have all contributed to some extent to the work of making an accurate detailed map of the United States.

SPEEDING UP THE MAP

Just why lawmakers should need years of argument and persuasion to be moved to a step of perfectly self-

evident necessity to their nation's welfare is a mystery that no Einstein can fathom, but it is true that for more than twenty years Congress has been besought in vain to provide funds for speeding up the work of mapping this country. As long ago as the year 1902 a collection of appeals in behalf of this undertaking filled sixty pages of a Congressional document.

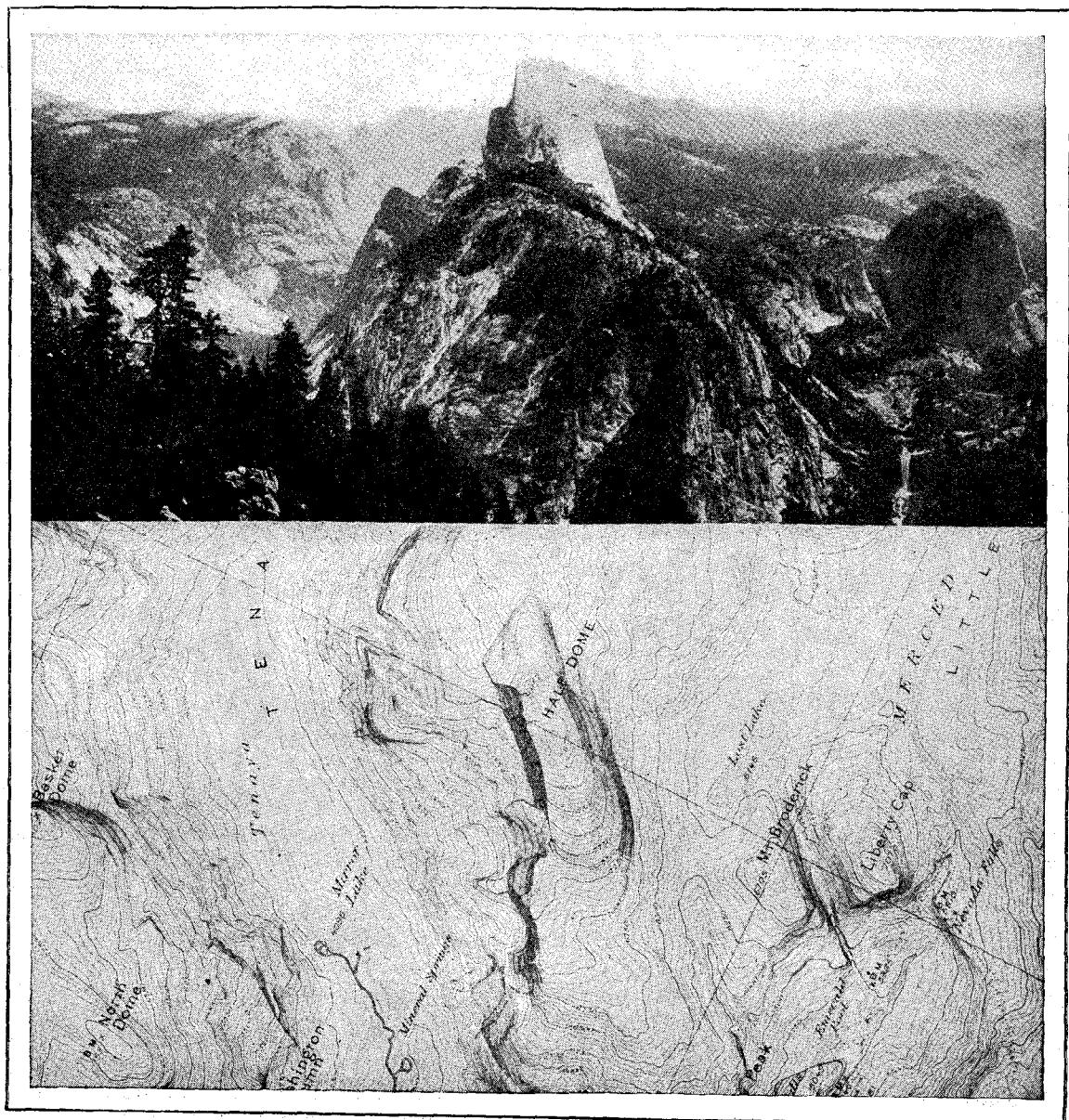
Recently the demand has become so urgent and comes from such influential quarters that it can hardly be resisted much longer. The matter was brought to a focus in January, 1922, when Representative Temple, of Pennsylvania, introduced a bill (H. R. 10057) providing for the complete mapping of the country within twenty years and appropriating \$950,000 for the first year's work. This bill did not pass the committee stage, but will be reintroduced and vigorously pushed at the next legislative session.

Meanwhile Congress has provided a partial measure of relief in the shape of a substantial increase in the regular appropriations for the Geological Survey.

HALF DOME AND VICINITY, YOSEMITE VALLEY, CALIFORNIA

Scale 1:24,000, contour interval 50 ft.

Part of one of the Geological Survey topographic maps (much reduced) and a photograph of the region it represents. Note how the crowded contour lines correspond to steep slopes



IN THE BOW OF THE SPLENDIFEROUS

A STUDENT COMES HOME STEERAGE

BY OSCAR LEWIS

WHEN the steamship companies in France some months ago suddenly increased their fares on all classes of passage to America, the news seemed to create hardly a ripple of interest. The newspapers announced the change in a fine, casual way, and on the surface the life of Paris—the life of the tourists in Paris—went on much as though nothing had happened.

Probably nothing much did happen among the prosperous parties who support the gilded hotels along the Rue de Rivoli and the Place Vendôme. There were mild expressions of regret that such things could be, no doubt, but, on the whole the increase was accepted with equanimity. It meant one less shopping tour to the Rue de la Paix, one less gown at “the only shop, my dear, that has a *thing* this year,” perhaps merely an additional draft on the bulging letter of credit.

But over across the river, on the left bank, the increase was not so calmly greeted. It is no exaggeration to say that the news created a profound sensation in the cafés of the Boul Mich and the Boulevard du Montparnasse. It created in the private affairs of more than one temporary resident of the Quarter a condition that can be described only as a crisis. The newspapers in their beautifully casual reports carefully pointed out that the steamer fare increases were, in fact, not increases at all, but mere “readjustments” to counteract the depreciation of the French currency, and that, although one now must pay, say, 400 francs more to get to New York, the rate from New York to Paris—payable in dollars—remained at its old figure.

A pleasing fact, this last, and interesting to the world at large, but it received only passing attention from the American students of the Quarter, particularly from those students who were about to return home. The increase, whether real or only apparent when viewed internationally, was real enough to those who had to pay the difference, and more real still to those (for art students are likely to be a hand-to-mouth lot, particularly in these days) who did not have the difference to pay. To those who had to go back there was only one way out, though the decision was not always arrived at without a struggle—the steerage.

“Well,” says the student, philosophic because it is necessary to be, “there remains the steerage.”

The words, for the benefit of his

listeners, are pronounced with bravado, but in his heart he has misgivings.

The misgivings do not leave him when presently, having put off the matter as long as possible, he enters one of the chaste, walnut-paneled steamship offices in the vicinity of the Opéra. He wedges his way between a lady from Pittsburgh and a gentleman from Chicago, both, to the student's eyes, offensively prosperous, both engaging passage, with much studying of deck plans, on that much-advertised super-ship, the Splendiferous.

An inspiration seizes the prospective steerage passenger, an inspiration that causes him somewhat ironical satisfaction.

“I too shall go,” says he to himself. “Even I shall sail on the Splendiferous!”

When one of the clerks presently engages his attention, he pronounces the words firmly.

“The Splendiferous,” says he, already deriving a certain augustness from association with that awesome ship. “I wish to engage passage on her—a third-class passage.”

The clerk is tactful; tactful, yet a trifle remote and dignified, as befits the visible representative of such a ship as the Splendiferous. With this godlike clerk our student holds brief conversation; he pays over his hoard of francs to a cashier (a huge amount of francs, even for third class, he thinks), and he receives in return a slip of paper. It is an unimpressive slip compared with the magnificent certificates he sees passed over to the plutocrats of the saloon. He is instructed that if he appears at Cherbourg on a certain day and at a certain hour the Splendiferous herself will deign to pick him up and convey him, inside her magnificent skin, to a dockside in New York.

The traveler, who is now committed to the thing, returns for a few days to his old haunts in the Quarter. He receives the congratulations and condolences of his friends. He uses the word Splendiferous frequently. Presently he packs his belongings, and takes a train for Cherbourg. There he surrenders his individuality and a number of things happen to him, toward the end of which he is hauled out to sea upon a tender, herded up a gangway, and deposited firmly upon the mighty deck of the Splendiferous.

Our friend from the Quarter has been for some hours a mere bit of passive material in the clutch of a machine. This machine's job was to pick him up at a Cherbourg dock and

convey him, through fixed and official channels, out of France and into the third-class “accommodations” of the Splendiferous. Having completed its job, the machine unceremoniously drops him, and our passenger is free to become a human being again.

As a human being he develops at once an intensely human quality. He becomes curious about his surroundings, about his fellow steerage passengers, about his steerage accommodations.

The last act of the machine has been to place his baggage upon the berth which corresponds to the number on his ticket. The berth, he notices now, is narrow—narrower than any berth he had ever occupied on other and more prosperous voyages. The room itself is narrow, and it has four berths, only two of which, fortunately, are to be occupied; for this trip is light, the steerage is not full.

“Only two to a room,” says he, approvingly.

He observes, too, that the tiny room is clean. The coarse linen on the berth is crisp, the mattress and pillow stuffed with new straw. There is a washstand, a mirror, an electric light, two towels, some clothes-hooks. As a place to sleep, he decides, it will do. It is not the Ritz, but it will do. He puts on his cap and starts to go on deck.

Going on deck proves to be an intricate business. From his stateroom he must go down a narrow passage, past twenty other staterooms exactly like his own. He must then climb up two decks, and this brings him into a large room, shaped like a spearhead, running into an acute angle at its far end. That acute angle, he rightly guesses, is none other than the peerless bow of the Splendiferous. The spear-shaped room is furnished with at least twenty-five long tables, and each table is flanked by from a dozen to twenty chairs.

This room, he rightly concludes, is the third-class dining-room. He has been given a card which tells him, in twelve languages, that his table is to be Number 9. He wonders at the company's thoroughness in informing him of this fact in Polish as well as English, and in French, German, Swedish, Russian, Czechoslovakian, Danish, Hungarian, Italian, Greek, and Rumanian. But presently he ceases to be astonished at this; he discovers that the steerage is nothing if not linguistically versatile. Every regulation, every notice, is translated into a dozen languages. He is told in