Struggle of the London Naval Parley

Britain's Compromise Proposal on Japan's Demand for Parity Assailed by Noted Japanese in Tokyo

Acme

American and Japanese delegates at London: (Front, left to right) Vice-Admiral Isoroku Yamamoto of Japan; Admiral William H. Standley, American Chief of Naval Operations; Norman H. Davis, American Ambassador-at-Large; Tsuneo Matsudaira, Japanese Ambassador to Great Britain; and (behind) members of the American and Japanese delegations

A naval-limitation proposal which would recognize Japan's nominal naval equality was taken under consideration by the United States after a strong appeal made by Sir John Simon, British Foreign Secretary, to the American representatives in the preliminary naval conversations—Norman H. Davis and Admiral William H. Standley.

According to the British compromise proposal, recognition of Japan's theoretical naval equality would be accompanied by a gentleman's agreement under the terms of which each Power would proclaim the limit beyond which its naval establishment would not be expanded during the next five years.

The British Position

The chief British objective, it was said, was to prevent Japan from cutting herself loose from all treaty restrictions and determining her own naval strength regardless of Great Britain and the United States.

To accomplish that, the British suggested that Japan's equality be recognized by both English-speaking Powers.

To match that yielding to Japan, the "concession" to the United States would be continuance of the ratios in fact on the present basis of 5-5-3.

Despite reports of the willingness of the Japanese delegates at London to give fair consideration to the British compromise proposal, Viscount Korekiyo Takahashi, former Finance Minister, declared at Tokyo, in an interview published in the Japanese newspapers, that Japan would absolutely reject any proposal to give her nominal naval parity but actual inferiority. "If Japan's clear demands for parity and common tonnage maximums are refused," he said, "it is futile to continue the naval discussions." Declaring that Japan would not concede one step, he said in the same breath that, if negotiations were broken off, it would not be Japan's fault.

The British naval compromise proposal was "a clever diplomatic trick to give Japan equality nominally, but not in substance, similar to granting Germany equality of armaments, but making it impossible for her to obtain it." That was the statement at Tokyo of Gen. Kuniaki Tanaka, head of the Merinkai, powerful reactionary organization composed mainly of retired officers.

When Britain and the United States had brought their navies up to treaty strength, he added, it would be too late for Japan to catch up, so the Japanese must "forge ahead to attain security from the day when the existing treaties are abrogated, or from the day when new treaties are concluded."

France was reported to be watching the London negotiations with the greatest interest. France never has been a believer in armed limitation by ratio, and even when the famous 5-5-3 ratio was proposed it, and France's part in it, was accepted without enthusiasm. The French believe the armaments questions can not be settled arithmetically. From the experience of its application, it was said to be France's conviction that instead of leading to a feeling of settlement and security, it leads to rivalry.

Seeing that the naval talks seemed to be leading nowhere *The Spectator* (London) wondered whether Japan was negotiating in the Oriental fashion, with a view to accepting later less than she has been asking. If not, then an era of appallingly costly competitive building appeared to be looming.

King George V, in his speech proroguing Parliament until last Tuesday, expressed hope for a new naval treaty "in order that the world may be spared the evil of unrestricted competition in naval armaments, so effectively averted in recent years by international agreements freely entered into by the parties concerned."

In Foreign Fields

London—A sum of $10,000,000 will be set aside from the British public revenues to finance the activities of two special commissions charged with bringing new hope to areas in the United Kingdom which prosperity seemed to have forsaken forever. The distressed sections are in South Wales, Northern England, and the Scottish Clydebank. The commissions will give their whole time and attention to the problem of recovery in these regions. They will have the widest possible authority and will have a free hand to experiment. The Government, said Neville Chamberlain, Chancellor of the Exchequer, believed the commissions should frame schemes for employing local labor in the "derelict" districts, to plan them anew, with a view to making them more attractive. He also suggested the commissions should consider the extension of work in occupational centers and encourage agricultural holdings, including cooperative holdings. The commissions would have power to buy and sell land, or buy land and turn it over to local authorities.

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Prague—A new figure in the European race for armaments appeared when Czechoslovakia formally announced her entry. Minister of National Defense Bohumil Bradac declared in a budget discussion that it had become necessary to fortify Czechoslovak towns, which were particularly vulnerable. Construction of fortifications would commence next spring, he added. The youth of the nation, he said also, must be trained to bear arms as the work of gymnastic organizations in this direction was not sufficient. He urged the introduction of a two-year period of military service. Foreign Minister Eduard Benes said that for the slogan "if you want peace prepare for war," he would substitute "if you want peace, prepare for peace." Yet he was compelled to recognize that there were moments in the life of a nation when to neglect preparation for defense amounted to an invitation to war. Until now Czechoslovakia, compelled by her geographical situation and the disposition of her people, has remained the last one of the pacifist nations.

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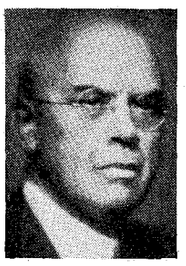
Dublin—President Eamon de Valera was reported as having the satisfaction of feeling that he has behind him one of the strongest political organizations Ireland has had for many years. At the ninth Annual Congress of his Fianna Fail Party nearly 2,000 delegates, representing every county in the Free State, thronged the Mansion House in Dublin. The Secretary of the party reported that branches of the Fianna Fail had increased by 116 during the past year and now totaled 1,893. Only in South Mayo had there been a decrease in party strength, against which there were notable advances in Kilkenny and Cork.

The Industry of "Mining the Air"

Engineers Extract From the Atmosphere the Rare Gases Used to Improve Electric Lamps, Supply Materials for Colored "Neon Signs," and for Many Other Industrial Uses

WHEN the British scientist Cavendish in 1785 first discovered that there were gases in the atmosphere other than nitrogen and oxygen, and concluded that they did not amount to "more than the 1/120th part of the whole," it is extremely improbable that he thought an important industry would some day be built upon that tiny fraction.



Dr. Floyd J. Metzger

Such an industry nevertheless has appeared, and within the last decade has grown to be an important one. From a small fraction of less than 1/100 of the atmosphere, engineers now extract the rare gases needed to improve electric lamps, supply materials for colored "neon" signs, and fulfil the requirements of many less well-known industrial uses.

The extent and nature of the industry of "mining the air" was revealed last week at the Chemists' Club, New York, by Dr. Floyd J. Metzger, vice-president in charge of research and development of the Air Reduction Company and director of research of the U. S. Industrial Alcohol Company and the U. S. Industrial Chemical Company. The occasion was the presentation to Doctor Metzger of the Chemical Industry Medal for 1934, in recognition of his researches in the rare gases, upon the results of which much of the new industry has been built.

Aside from water vapor, carbon dioxid and various "impurities," the air contains varying amounts of eight gases. The greatest part of the air is nitrogen, more than 78 per cent. Oxygen amounts to nearly 21 per cent. The other six, all together, represent less than 1 per cent. of the atmosphere.

The most common is argon, totaling more than nine-tenths of one per cent. Neon, helium, hydrogen, krypton, and xenon are found only as traces, neon being present in the ratio of about one part in 65,000 of air; xenon, the rarest of all, one part in 11,000,000.

The atmosphere has been a source of commercial nitrogen and oxygen since before the War, and now practically all of these elements used in industry are obtained from it. Oxygen finds many uses, ranging from medicine to the treating of metals, the bulk of the supply being devoted to the operation of oxyacetylene torches for welding and metal cutting. Commercial nitrogen also has many uses, the most important being the manufacture of ammonia, which in turn is used in making fertilizer, explosives, and other commercial nitrates.

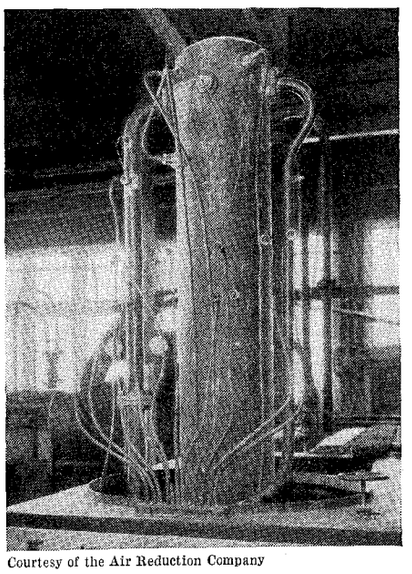
Nitrogen and oxygen are obtained from the air by compressing and cooling it until a critical point is reached, at which the air liquefies. The gases can then be separated simply by allowing the liquid to boil, which it does at the very low temperature of about 195 degrees below zero Centigrade (320 degrees below zero Fahrenheit). At this temperature the nitrogen, having a lower boiling-point than oxygen, evaporates. The process is exactly like that of distillation of alcohol.

Composition of the Atmosphere

Element	*By Volume*	*By Weight*	*Boiling Point (Centigrade)*
Nitrogen	78.03 per cent.		—195.814
Oxygen	20.99 per cent.		—182.963
Argon	0.94 per cent.		—185.84
Hydrogen	1 part in 10,000		—252.54
Neon	1 part in 65,000	1 lb. in 44 tons	—246.3
Helium	1 part in 200,000	1 lb. in 725 tons	—268.98
Krypton	1 part in 1,000,000	1 lb. in 173 tons	—152.9
Xenon	1 part in 11,000,000	1 lb. in 1,208 tons	—107.1

The problem of extracting the rare gases is somewhat more complicated. Recovery of argon is easiest, because it is most abundant. The boiling-point of this element falls between that of oxygen and nitrogen, being approximately ten degrees above the boiling-point of nitrogen and three degrees below that of oxygen. In the apparatus now used for the continuous commercial production of these gases, the argon is withdrawn at a point where the oxygen-vapor is richest in argon, and contains only a little nitrogen.

The argon in the gas thus withdrawn amounts to between 5 and 7 per cent. It must be reliquefied and further distilled, which purifies it to about 65 per cent. argon, the impurity being mainly oxygen and a little nitrogen. Further purification is accomplished chemically, by burning the oxygen with an exact proportion of hydrogen, and removing the nitrogen by combining it with alkali metals or metallic calcium at high temperatures.



Courtesy of the Air Reduction Company

Top section of an argon distilling column, the part pictured being about eight feet tall. The apparatus is capable of producing 4,000 cubic feet of pure argon daily

The pure argon gas thus obtained is used extensively to fill electric light bulbs. It has practically replaced nitrogen for this purpose. Nitrogen-filled lamps, in their turn, had replaced the old vacuum bulbs. Now it has been demonstrated that these lamps would be a third more efficient—that is, give a third more light for the same amount of current—if they were filled with a mixture of xenon and krypton.

It has been estimated that the total electric light bill of the United States is $620,000,000 a year. If nitrogen were still being used instead of argon, the bill would be about $125,000,000 a year larger. The substitution of a mixture of krypton and xenon for argon would decrease the present cost another $200,000,000 a year, or about half a million dollars a day.

The extraction of these latter gases is at present an extremely difficult process. Even if it were possible to recover every trace it would be necessary to process 173 tons of air for every pound of krypton, and 1,208 tons for each pound of xenon.

These gases liquefy at temperatures considerably above the boiling-points of the other constituents of the atmosphere, therefore tend to accumulate in oxygen. By drawing off the oxygen, and subjecting it to repeated fractional distillations, the krypton and xenon finally can be segregated as impurities in a small amount of liquid oxygen.

The liquid is then withdrawn from the system and allowed to evaporate, the vapor containing about 5 per cent. krypton and xenon, and the rest oxygen. This gas is purified with the aid of "activated" charcoal at low temperatures. The charcoal, prepared by special heat and chemical treatment, acts somewhat like a sponge, but a selective one—for instance, a sponge

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