square inch to 480 pounds. The gas is reservoired in the Oriskany sandstone, that has thickness of about twelve feet. The diagram below shows a vertical east-west section across the eastern part of the Dundee gas field and the ancient river canyon, on a line one-half mile north of Rock Stream Corners and three miles south of Dundee Village.

It was theoretically estimated that at the locality of the cross-section the rock bottom of the buried canyon was at least 800 feet below sea-level. The depth of the lake is there 550 feet. But conditions developed by the drill appear to prove that the drift filling ex-

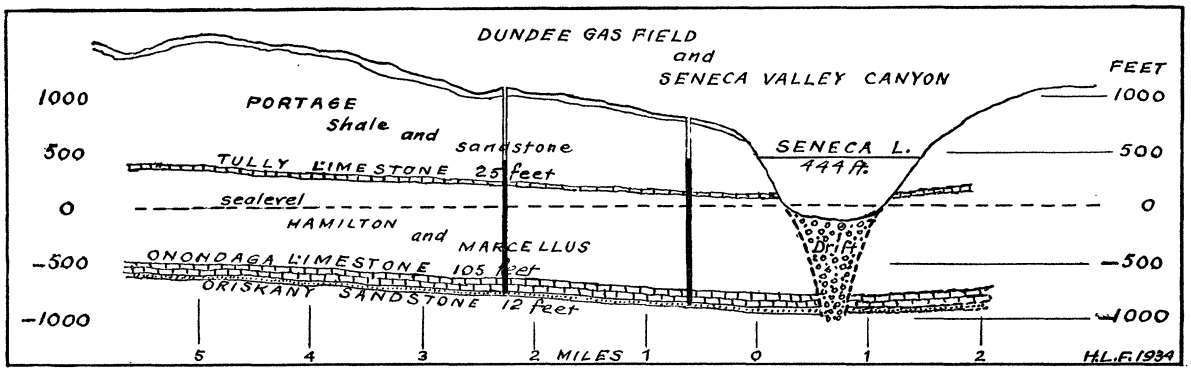

FIG. 1.

tends down to at least 900 feet below tide. Two of the wells nearer the lake, indicated in diagram, are flooded with water to the precise level of the lake, 444 feet. This implies a more effective water communication between the lake and the gas wells than could be permitted by the impervious rock strata overlying the Oriskany. It is predicted that the numerous drill holes on the west will also fill with water to the lake level as the gas is withdrawn. Evidently the porous Oriskany sandrock abuts against the glacial drift in the bottom of the canyon, as the diagram suggests.

With knowledge of these relations in the geologic structure Mr. Beebee recognized that the gas in the Oriskany, and under great compression, must have found some escape, probably for many centuries, by migration into the Seneca Valley drift; and such volume of gas would have ultimate escape upward through the water of the lake. And here was explanation of the Seneca Lake guns.

It is evident that any gas pushed into the valley drift would work its way upward under the progressively lower vertical pressure. And when a bubble of gas finally reached open water at the bottom of the lake it would rapidly ascend. With the steady reduction in pressure during its ascent the bubble would correspondingly expand. Starting at the lake bottom, under compression, in ascending through 500 or 600 feet of water it would expand and enlarge twenty to forty times its original volume, depending on the amount of compression. The inevitable explosion at the surface, along with the reaction of the displaced water, would produce the low-pitch, dull sound heard infrequently in the southern part of the Seneca Valley.

Northward from Dundee, or in the middle and northern portions of the valley, the gas-bearing Oriskany stratum, having a southerly dip, lies at higher elevations. With less overburden of drift and water any reservoired gas in that territory found easier escape. This condition may account in part for the small volume, or the entire absence, of the gas in the Oriskany north of the Dundee field; even where the folded strata and anticlines make structure favorable for its accumulation.

It appears probable that the depletion of gas from the Dundee field must have been in effect ever since the removal of the latest ice-sheet, thus allowing open-valley condition. Certainly the rapid withdrawal of the gas by human interposition will quickly extinguish the supply for the Seneca Lake artillery. With no sounds reported for the last summer it is probable that even now the famous "guns" are silenced forever, and are only a memory of the mysterious and legendary past.

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A CODE FOR CHEMISTS?

THE strong movement among scientific men in commercial work in opposition to codes affecting testing and research laboratories is based on the following reasons:

A. The thoroughly unrepresentative character of the code proposed for all testing and research activities.

B. That laboratories would be required to furnish information concerning their activities to Code Authority, thereby disclosing names of clients and other confidential information concerning dealings with clients.

C. Contrary to belief prevailing hitherto, the code now contemplates including research activities as well.

D. Activities of laboratory assistants can not be limited to the forty hour maximum average affecting employees receiving less than thirty-five dollars per week.

E. That the Code Committee of eight has been unfair to other laboratories in the process of code formation and that thereby doubt is cast on their fairness in the administration of the code.

F. That the proposed code offers no protection against unfair competition by state institutions and inadequate protection against university laboratories.

The administration appears to be eager to further the acceptance of the code and therefore attempts to bring into harmony the various factions concerned. From the point of view of the NRA codification of all industries is highly desirable for purposes of further reduction of hours and increase in wages *en bloc*.

The group represented by the writer has since its inception (July 3, 1933) endeavored to steer a middle course by cooperating with the NRA and developing a code which in addition to the features required by the NRA would contain provisions strengthening the profession of the food chemist and thereby increase employment. This movement has the cooperation of over seventy-five laboratories representing approximately four hundred workers. Most of the laboratories are small and their problems are more those of the employee than of the employer. In fact, many of the collaborators had to abandon all help with the exception of a porter or office boy. The principal way to aid recovery is to get more work. There is overwhelming evidence at hand that the food industries, still quite prosperous, in general consider laboratory work a luxury. In many cases laboratory reports are mere incidentals supplementing the purchasing agents' good judgment, connection with a laboratory being maintained for its "scenery effect." Because of this attitude the chemist is not rendered the same degree of recognition or business courtesy as his professional brothers, the legal adviser or the advertising counselor. Executives will sanction the expenditure of ten thousand dollars to a convincing charlatan who is able to simulate an improvement of their products by word of mouth or on paper, but will hesitate to appropriate one thousand dollars for honest work to be done in the actual improvement of their products.

The code proposed by the "Organized Food Laboratories" may be unorthodox as codes go, but it endeavors to remedy these conditions by gaining proper recognition for honest scientific work. It provides for a carefully planned, well-coordinated joint effort, to bring closer together the food industries and the independent specialized laboratories. Among the methods to be employed for this purpose the following are ready to be put into operation:

A. Enlargement of the bi-weekly news letters to include material of direct interest to the manufacturers.

B. Issuance of a directory listing all food laboratories and their specialties such as cereal products, vitamin assays, food preservatives, fruit sprays, milk products, chocolate, confectionery products, potable waters, meat and meat products, fruits and vegetables, beer, wines, distilled liquors, oils and fats, fodders, etc., etc.

C. Issuance of bulletins on special fields illustrating the dollar and cents value of applied science.

D. Full-page advertising in food journals listing members of the food laboratory industry.

Simultaneously with these endeavors to more closely mesh laboratory and industry, there will be activities to improve the industry itself, such as:

A. A section of the news letter will serve as a clearing house for new methods and improvement of old ones.

B. Agreements on standard methods wherever possible.

C. Classification of employees according to training and practical experience, etc., etc.

To be fully effective the plan must include all laboratories serving the food industries. The code will contain a clause making cooperation toward greater and more effective service to food industries compulsory. The increased work resulting from this program will render the compulsory features, such as the fifteen dollar a week minimum and the forty hour maximum for employees receiving less than thirty-five dollars a week, unobjectionable.

The plan has "NRA value" both from the angle of labor as well as the angle of the consumer. It is unusual, but in this day of alphabetic management the unusual becomes the order of the day. It can be said with near certainty that it will put chemists back to work.

H. H. BUNZELL,
Chairman, Code Committee
"Organized Food Laboratories"

LABORATORY FEES

APROPOS of Dr. Swan's note on page 579 of the issue of SCIENCE for December 22, 1933, I would like to call attention to the fact that at least some institutions have already acted on the suggestions which he makes.

In September 1925, a $10.00 incidental fee per quarter was first charged all students at Montana State College to replace the former laboratory fees charged students. Since the inauguration of this plan students in laboratory science courses have paid no