

Distilling Manganese

Physiology

Distillation gets most of its publicity as a result of its more or less disreputable employments; but it achieves most of its real usefulness in the world in technical laboratories few people ever hear about, at tasks which only chemists can think up for it. Its newest job is to get manganese, one of steel's most important alloying agents, out of its ores in an almost absolutely pure condition. An improved apparatus for doing this was described at a meeting of the Metallurgical Advisory Board by Dr. James B. Friauf.

Distillation of any kind depends on boiling the material to be purified, and then condensing the steam or vapor. This is simple enough with water, which boils at 100 degrees Centigrade, and with alcohol, which boils at an even lower temperature. But the boiling point of manganese at atmospheric pressure is about 1,900 degrees, and even in an almost complete vacuum it is still in the neighborhood of 1,000.

To accomplish this difficult distillation, Dr. Friauf encloses a magnesia crucible full of manganese ore in a chamber of fused silica. Around the crucible is a coil of water-cooled wire, through which a high-tension, high-frequency alternating current is passed. This induces what are known as "eddy currents" within the coil, and this induced electricity heats the manganese in the ore above its boiling point, causing it to pass off as a vapor. The gaseous manganese rises from the crucible through a magnesium chimney, and condenses into a solid again on its cooler walls. From there it is recovered as a solid metal, so hard that it can scratch glass.

Science News-Letter, November 2, 1929

New 300-Foot Falls

Geography

The sudden birth of a towering waterfall 300 feet high is reported from Iceland by an English traveler writing from Reykjavik. It is due to the breaking down of an ice dam across a lake on top of the glacier-capped mountain known as Lang Jökull, which lies in western Iceland not far from the famous Geysir, first known of all geysers of the world.

According to the statements of farmers in the neighborhood, the lake burst its glacial barrier during the course of a single night with a noise like thunder, and so flooded the little river Tungufjot that it carried out a concrete bridge.

Science News-Letter, November 2, 1929

Biology

is the study of *living things*

The interest of the student is always stimulated by observing living forms and he should be encouraged to collect and bring to the laboratory live specimens to be placed in the aquarium or vivarium.

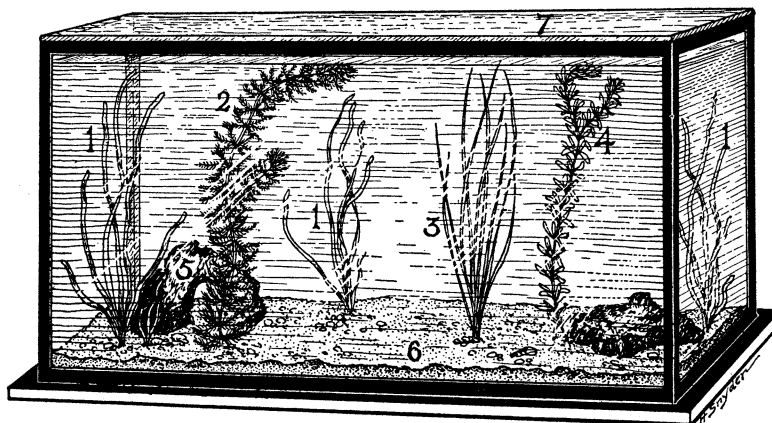


Diagram to show proper planting of a 9-gallon aquarium tank

- | | |
|-----------------|-------------------------|
| 1. Sagittaria | 5. Rock |
| 2. Myriophyllum | 6. Sand or fine gravel |
| 3. Vallisneria | 7. Glass on top of tank |
| 4. Elodea | |

Write for the **Turttox Free Service Leaflet No. 5**. This describes in detail the procedure in starting and maintaining a balanced aquarium in the laboratory. The profit and pleasure derived from a perfectly balanced aquarium, containing interesting plant and animal specimens, is well worth the time and effort required.

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