



Seagulls

► IN Salt Lake City there stands a monument to seagulls. It commemorates a critical moment in the early days of the Mormon settlement in Utah when a black cricket plague threatened to destroy the crops for the second year in succession.

Suddenly out of the blue thousands of seagulls appeared and made short work of the insect destroyers. The harvest was safe. The settlers hailed their deliverance from starvation as a miracle. In gratitude they

raised a monument to their saviors, the seagulls.

Less dramatic but more common is the miracle which never fails to impress seagoing travelers, the seagull escort following ocean liners far out in the lonely ocean.

Sometimes the first sign the voyager has that the trip is nearing its end is the appearance of gulls hovering in the wake of the ship, long before he can detect any sign of land. At the beginning of the voyage as the ship slowly left port the gulls were there, wheeling gracefully astern and ready to pounce on any edible refuse cast overboard.

Then at some point the traveler notices that the gulls are gone, that they have turned back, he realized with a thrill that he and the ship are an insignificant dot in the midst of a gigantic expanse of water. It is at this moment that he is apt to cast a glance at the ship's bridge and hope that the captain knows his business.

At least one species of gull, the common

kittiwake, sometimes makes the whole trip, following a ship from one side of the ocean to the other. Young gulls, marked in England, have been subsequently recovered on this side of the Atlantic. The only plausible explanation is that they got here by following ships.

Gulls are scavengers, feeding on refuse or dead fish. They are birds of the northern hemisphere, inhabiting coasts, rivers, and harbors. They are also to be found on large inland lakes such as the Great Lakes and the Great Salt Lake in Utah. The gulls that swooped down to the timely rescue of the Mormon settlers' crops no doubt came from Great Salt Lake.

The flight of gulls is full of grace and skill. They can hang effortlessly in the air for hours, trimming their wings to the wind, slowly circling, scanning, waiting. Throw something overboard, and down they swiftly swoop, for whatever provender the water may yield.

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#### CHEMISTRY

## Oscillators for Analysis

► HIGH frequency oscillators similar to small radio sending stations can tell the chemist how much salt is in the sea or how much of a valuable element like beryllium might be lost down the drain. This extends the principle of radio into a new field.

Scientists at the University of Wisconsin and the Oak Ridge National Laboratory have independently described instruments to follow reactions in chemical solutions by use of high frequency oscillators.

The standard method for measuring an unknown amount of material is employed. The chemist keeps adding to a small sample of the solution known amounts of a substance that will combine with it, until the unknown material is all used up. The high frequency device tells when this titration is finished.

The vessel containing the solution to be titrated is placed in the field of a high frequency oscillator while measured volumes of the reagent are added. As the chemical reaction proceeds and composition of the solution changes, the load on the oscillator changes. This produces a measurable change in plate or grid current or in frequency. If one of these quantities is graphed against the amount of added reagent, the curve has a break in it at the point where exactly enough of the reagent has been added to complete the reaction. Such a titration curve is obtained without any additions to show color changes or immersing electrodes in the solution being tested.

Several oscillators ranging in frequency from 5 to 360 megacycles have been built, but considerable development will be needed before the instruments are ready for commercial use.

The effect is believed to be due to minute changes in the capacity of the chemical solutions. Small capacitance changes will produce relatively large changes in plate current of the grid-tuned plate oscillators. At Oak Ridge the system has been used in titrating solutions containing beryllium and aluminum, elements that act either base or acid, depending upon their chemical surroundings.

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#### MEDICINE

## Double Danger Faces Pneumonia Patients

► WARNING of a new danger to pneumonia patients was issued by Dr. Thomas Anderson of Glasgow at the meeting in Liverpool, Eng., of the British Medical Association.

The danger is that doctors may be too ready to consider all unusual pneumonia cases as virus or atypical pneumonia. Unusual pneumonias due to bacteria instead of viruses are not uncommon, Dr. Anderson declared.

If the doctor does not base his diagnosis on tests that will show whether or not the cause is the bacteria kind of germ, he may fail to give the patient a sulfa drug, penicillin or one of the other modern remedies effective in bacteria-caused pneumonias. These remedies, with the possible exception of aureomycin, are not effective in virus pneumonias. Consequently doctors are unlikely to give them if they think the pneumonia is virus-caused.

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