

Guanos	{ Nitrogenous. { Phosphatic, or "leached." { Bat Guano.
Animal remains	{ Bone beds. { Shell beds. { Animal exuviae.

We will now proceed to trace in a cursory way the commercially known deposits, commencing with the most recent, and passing stratigraphically in descending order to the more ancient formations.

GUANOS.

Guanos are of two kinds—Nitrogenous or those containing their original manurial qualities, and phosphatic or "leached," the latter being in a more or less mineralized condition by exposure to weathering.

Among the Nitrogenous guanos, we have the Peruvian, Ichaboe, Patagonian and Falkland Islands.

The phosphatic or weathered guanos include those of the Pacific or Polynesian Islands, Sidney, Phoenix, Starbruck, Baker, Howland, Jarvis, Enderbury, Malden, Laccapède and Arbrohlos Islands.

Some of these deposits are more or less exhausted, and new Islands furnishing similar products are from time to time worked.

The West Indian guanos are from Aves, Mona, Tortola.

Other South American are Patos Islands, Magillones, Rata.

From Africa, Saldanta Bay and Kuria Muria Islands.

Bat Guano, the product from the floors of caverns inhabited by bats, have sometimes been sent to market as a rich fertilizer. It is found notably in Cuba (W. I.) and in N. Borneo. It possesses a characteristic dark brown colour and exhibits the undigested parts of beetles wings and insect *debris*.

BONE BEDS.

These are found in nearly all sedimentary strata, from the Devonian up to the present time, but with the appearance of those remarkable reptilia in the Permian age, we find that these kinds of phosphatic provisions of nature took enormous developments, augmenting the resources previously furnished by the amphibia of the Carboniferous epoch.