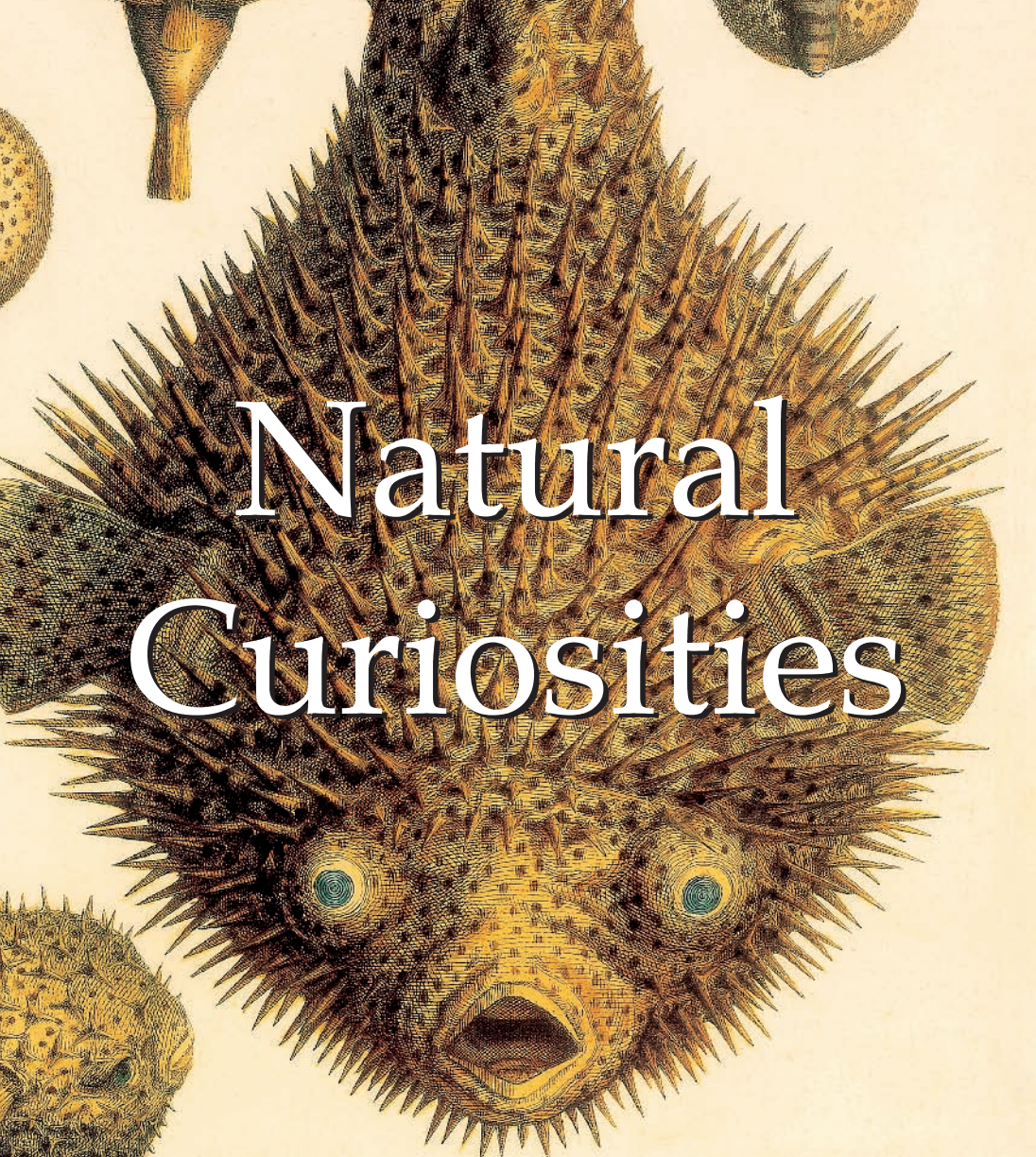
Natural
Curiosities

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"Nature does not hurry, yet everything is accomplished."

— Lao Tzu

The View

Jan Brueghel (Velvet Brueghel) and
Peter Paul Rubens, 1617.
Oil on canvas, 64.7 cm x 109.5 cm.
Museo del Prado, Madrid.

The curiosity cabinet of the Dimpfel family of wholesale ironmongers and miners from Regensburg

Joseph Arnold, 1668. Opaque pigment with heightening in gold on parchment. Ulmer Museum, Ulm.

Alfred Russel Wallace
On the Law Which Has Regulated the Introduction of New Species (S20: 1855)

Every naturalist who has directed his attention to the subject of the geographical distribution of animals and plants, must have been interested in the singular facts which it presents. Many of these facts are quite different from what would have been anticipated, and have hitherto been considered as highly curious, but quite inexplicable.

Emperor Rudolf II as Vertumnus (detail)

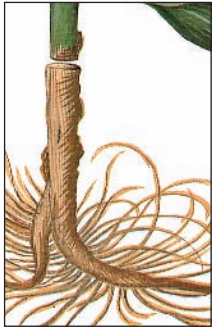
Giuseppe Arcimboldo, 1590.
Oil on wood, 70.5 x 57.5 cm.
Skokloster Castle, Balsta, Sweden.

None of the explanations attempted from the time of Linnæus are now considered at all satisfactory; none of them have given a cause sufficient to account for the facts known at the time, or comprehensive enough to include all the new facts which have since been, and are daily being added. Of late years, however, a great light has been thrown upon the subject by geological investigations, which have shown that the present state of the earth, and the organisms now inhabiting it,

Solanum melongena
Aubergine (Solanées)

Plate from Basilius Besler's *Herbarium (Hortus Eystettensis)*, 1613.

Melanzana fructu pallido.



are but the last stage of a long and uninterrupted series of changes which it has undergone, and consequently, that to endeavour to explain and account for its present condition without any reference to those changes (as has frequently been done) must lead to very imperfect and erroneous conclusions.

The facts proved by geology are briefly these: That during an immense, but unknown period, the surface of the earth has undergone successive changes; land has

I., II. *Capsicum specie*
Pepper with long, yellow fruits (Solanaceae)

Plate from Besler's *Herbarium*


II.
Piper Indicum Luteum latum
I.
Piper Indicum siliquis flavis.

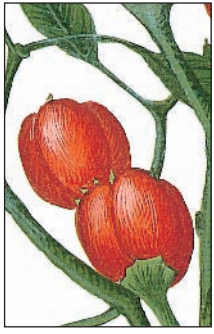
sunk beneath the ocean, while fresh land has risen up from it; mountain chains have been elevated; islands have been formed into continents, and continents submerged till they have become islands; and these changes have taken place, not once merely, but perhaps hundreds, perhaps thousands of times: That all these operations have been more or less continuous, but unequal in their progress, and during the whole series the organic life of the earth has undergone a

I. *Capsicum specie*
Sweet Pepper called "Tomato" (Solanaceae)

II. *Capsicum specie*
Pepper called "Cherry" (Solanaceae)

Plates from Besler's *Herbarium*


Piper minimum Siliquis rotundis.
Piper Indicum rotundum maximum.



corresponding alteration. This alteration also has been gradual, but complete; after a certain interval not a single species existing which had lived at the commencement of the period. This complete renewal of the forms of life also appears to have occurred several times: That from the last of the Geological epochs to the present or Historical epoch, the change of organic life has been gradual: the first appearance of animals now existing can in many cases be traced, their numbers gradually increasing in the more recent formations,

I., II. *Capsicum specie*
Red-fruited upward-facing Pepper (Solanaceae)

Plate from Besler's *Herbarium*


II
Piper Indicum medium longum
erectum.
I.
Piper Indicum maximum
rotundum erectum.

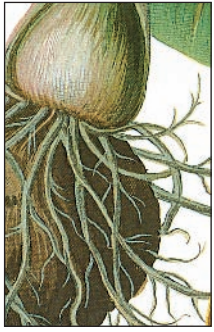
while other species continually die out and disappear, so that the present condition of the organic world is clearly derived by a natural process of gradual extinction and creation of species from that of the latest geological periods. We may therefore safely infer a like gradation and natural sequence from one geological epoch to another.

Now, taking this as a fair statement of the results of geological inquiry, we see that the present geographical

Canna indica
Red-flowered Canna Lily (Cannaceae)

Plate from Besler's *Herbarium*


Canna Indica rubra.



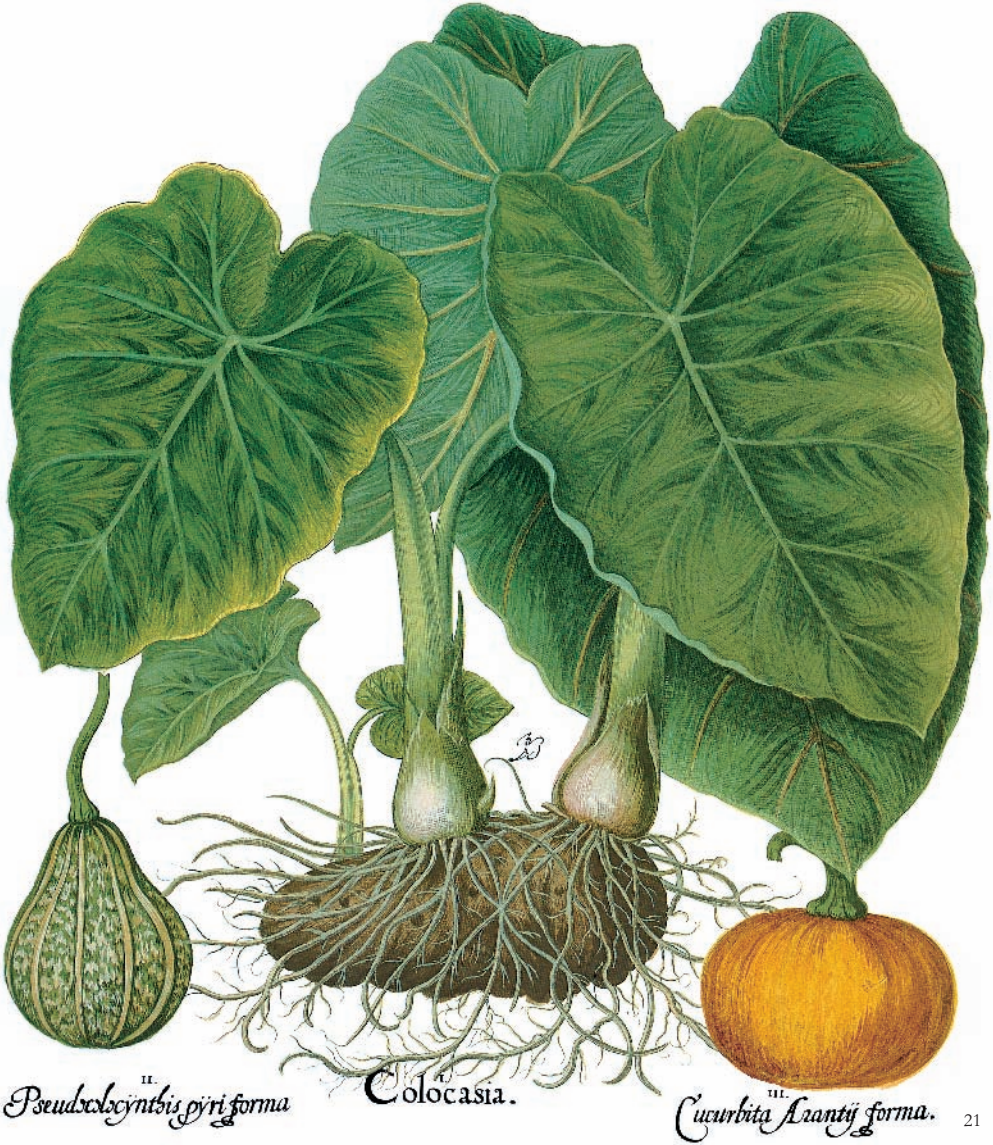
distribution of life upon the earth must be the result of all the previous changes, both of the surface of the earth itself and of its inhabitants. Many causes no doubt have operated of which we must ever remain in ignorance, and we may therefore expect to find many details very difficult of explanation, and in attempting to give one, must allow ourselves to call into our service geological changes which it is highly probable may have occurred, though we have no direct evidence of their individual operation.

I. *Colocasia esculenta* Taro (Araceae)

II. *Lagenaria specie*
Colocynth [Bitter Apple] (Cucurbitaceae)

III. *Cucurbita pepo* Squash (Cucurbitaceae)

Plates from Besler's *Herbarium*


II.
Pseudocolocynthis pyri forma
I.
Colocasia.
III.
Cucurbita Azantij forma.

The great increase of our knowledge within the last twenty years, both of the present and past history of the organic world, has accumulated a body of facts which should afford a sufficient foundation for a comprehensive law embracing and explaining them all, and giving a direction to new researches. It is about ten years since the idea of such a law suggested itself to the writer of this paper, and he has since taken every opportunity of testing it by all the newly ascertained

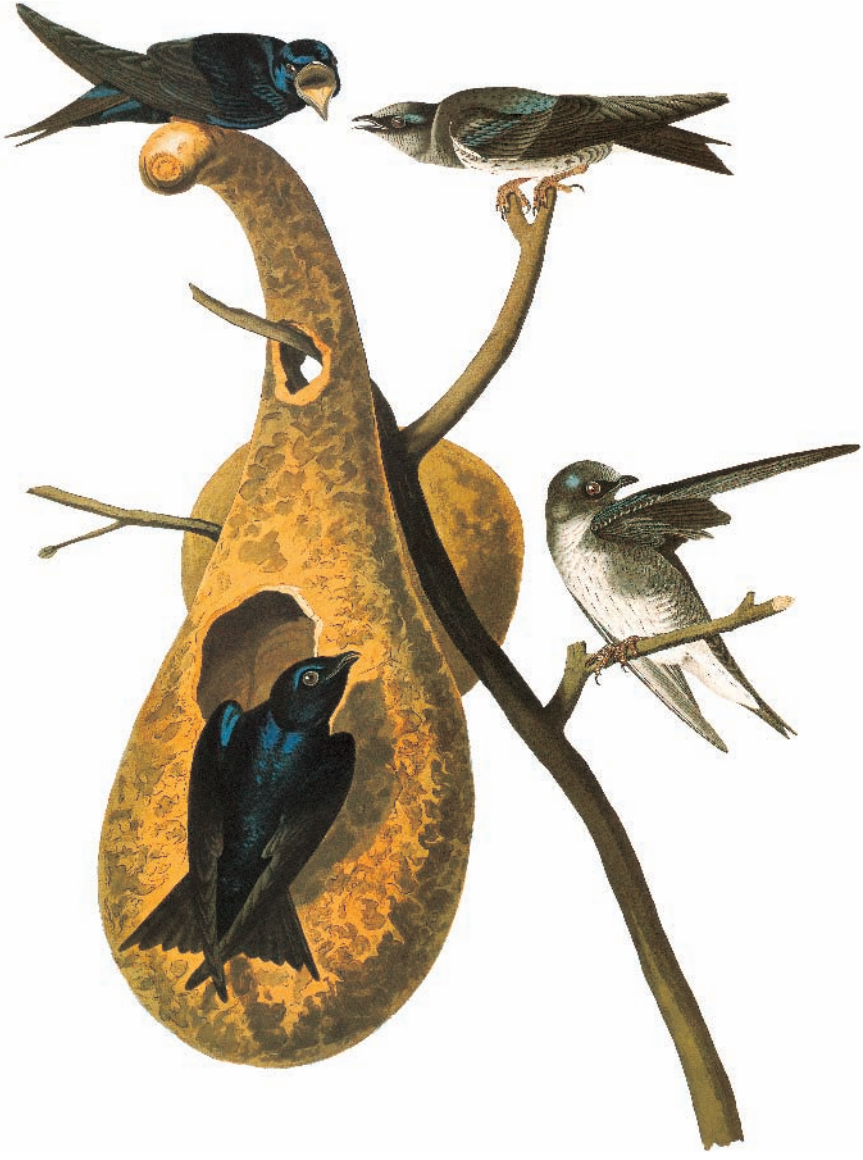
Phoenicopterus ruber
Greater Flamingo

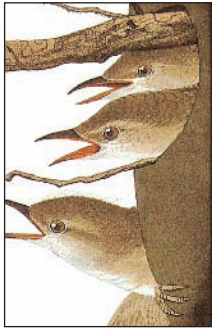
Plate 431 from John James Audubon's *Birds of America*

facts with which he has become acquainted, or has been able to observe himself. These have all served to convince him of the correctness of his hypothesis. Fully to enter into such a subject would occupy much space, and it is only in consequence of some views having been lately promulgated, he believes in a wrong direction, that he now ventures to present his ideas to the public, with only such obvious illustrations of the arguments and results as occur to him in a place far removed from all means of reference and exact information.

Progne subis
Purple Martin

Plate 22 from Audubon's *Birds of America*





The following propositions in organic geography and geology give the main facts on which the hypothesis is founded.

Geography.

1. Large groups, such as classes and orders, are generally spread over the whole earth, while smaller ones, such as families and genera, are frequently confined to one portion, often to a very limited district.

2. In widely distributed families the genera are often limited in range; in widely distributed genera,

Trogrodytes aedon
House Wren

Plate 83 from Audubon's *Birds of America*