

of nitric acid and ten of water is laid, and the whole is subjected to the action of the press. The nitric acid penetrates through the lithograph, and the stone receives its action equally in all the lights of the picture.

## Miscellaneous.

### Periodic Phenomena.

Considerable interest attaches to what may be termed the "periodic phenomena" of nature. Of such a character are the appearance and disappearance of animals, as bats and badgers, which conceal themselves during the winter, and pass through their hibernation; the change of dress at different seasons by the ermine, the stoat, and their allies; the coming and going of the regular winter and summer migratory birds; the retirement and hibernation of reptiles; the movements of certain fish up and down stream for the purpose of spawning; the appearance, transformations, and disappearance of insects; the leafing of trees; the flowering of plants; the ripening of seeds; the fall of leaves—all these, and more, are worthy of the attention of the lover of nature, and not beneath the dignity of man. Linnaeus constructed for himself a floral clock, in which the periods of time were indicated by the opening of or closing of certain flowers. Gilbert White, and others since his time, not disdaining to be his disciples in such a work, constructed a calendar, of which periodic phenomena presented themselves to their notice. Humboldt observes of the insects of the tropics, that they everywhere follow a certain standard in the periods at which they alternately arrive and disappear. At fixed and invariable hours, in the same season, and the same latitude, the air is peopled with new inhabitants; and in a zone where the barometer becomes a clock (by the extreme regularity of the horary variations of the atmospheric pressure) where everything proceeds with such admirable regularity, we might guess blindfold the hour of the day or night by the hum of the insects, and by their stings, the pain of which differs according to the nature of the poison that each insect deposits in the wound. And the Rev. Leonard Jenyns, the naturalist, remarks:—"If an observant naturalist, who had been long shut in darkness and solitude, without any measure of time, were suddenly brought blindfolded into the open fields and woods, he might gather with considerable accuracy from the various notes and noises which struck his ears, what the exact period of the year might be."

All such observation as we have alluded to are easily made and as easily recorded, and of all, none are of more interest than the migratory movements of birds. We know that some visit us in the spring and abide during the summer; others direct their flight hither late in the autumn, and spend with us their winter. But why this change, whence do they come, and whither do they go? We can partly answer this question, but only partially. We may declare, in general terms, that self-preservation and the perpetuation of the species, is the great moving cause. That the journeys undertaken in search of food, or a milder climate, or both, as consequence of the former

or the latter, or in search of suitable conditions for rearing their young; yet there are many special circumstances in which this answer is inapplicable or insufficient."

Knapp, in his "Journal of a Naturalist," remarks of the willow wren:—"It is a difficult matter satisfactorily to comprehend the object of these birds in quitting another region, and passing into our island. These little creatures, whose food is solely insects, could assuredly find a sufficient supply of such diet during the summer months in the woods and thickets of those mild regions where they passed the season of winter, and every bank and unfrequented wild would furnish a secure asylum for them and their offspring during the period of incubation. The passage to our shores is a long and dangerous one, and some imperative motive for it must exist; and, until facts manifest the reason, we may, perhaps, without injury to the cause of research, conjecture for what object these perilous transits are made."

The record of periodic phenomena made in the same district over a series of years is always of interest: but contemporaneous records made at numerous stations distant from each other, and in which the same kind of observations are made, would be of more interest still. Take, for instance, the first appearance of a swift for ten successive years in twenty stations between the Isle of Wight and Caithness; or the last note of the cuckoo heard between the Land's End and the Tweed. Many such trifles, apparently insignificant in themselves, become of importance when carefully and faithfully recorded, and such a work may be accomplished by those who make no pretensions to be men of science, but are content to call themselves "lovers of nature."—*Scientific Gossip*.

### Paris Exposition of 1867.

The following extract from the official circular issued by the French Government shows the periods fixed for the reception of goods, and the opening and closing of the Exhibition:—

Before January 31, 1866: Preparing and sending by the foreign commissions the detailed plan of arrangements of their countrymen, on a scale of 0m 020 to the metre, and of information intended for the official catalogue.

Before December 1, 1866: Finishing the palace and the building in the park.

Before January 1, 1867: Notifying French artists of their admission.

Before January 15, 1867: Finishing the special arrangements for exhibitors in the palace and in the park.

Before March 6, 1867: Admission of foreign products at the seaports and frontier towns indicated in article 44 of the general regulations, with permission for them to be forwarded to the Exposition, which shall be used as an actual custom house depot.

From January 15, to March 10, 1867: Receiving and unpacking goods in the Exposition.

From March 11 to March 28, 1867: Arranging the goods unpacked in the spaces ascribed for them.

March 29 to March 30, 1867: General cleaning of all parts of the palace and park.