Roman roads, Aitken streets and Watling streets are, compared to these, things of yesterday.

How is the knowledge of the chart passed on, without fault or break, from generation to generation? If old birds led the way the matter would be less incomprehensible. But, writes Herr Gätke, as "the *incontestable result*" of fifty years' watch in Heligoland:—

"under normal conditions, the autumn migration is initiated by the young birds from about six or eight weeks after leaving the nest.

"The parents of these young individuals," he adds, "do not follow until one or two months later!"

How and under what physical conditions are the journeys made?

Mr. Pycraft is a writer to whom ornithologists already owe much, and from whom they confidently look for more. His views will always carry weight, but they may change. Just now he thinks it "hardly necessary to attempt to bring rebutting evidence" to confute Herr Gätke's closely-reasoned argument that migration flights must be made at speeds which,

"Through the mists and vapours,
Amid these earthly damps,"

may well seem incredible; but, with atmospheric resistance removed, need seem no longer so.

The veteran ornithologist's dream of "the existence of a special respiratory mechanism, enabling birds to remain in strata of the atmosphere beyond the reach of all other organised beings," may yet prove true. There are things more improbable. Then we shall think nothing of flights at a speed of "a hundred and eighty miles an hour."

"Airy navies grappling in the central blue"

not many months ago seemed impossibilities. Now they seem uncomfortable probabilities.

These are a few only of the questions which have yet to be answered before we can hope to understand what the migration of birds means. The answers are not likely to be given in the lifetime of our generation, if ever. It is only by the patient collation of trustworthy observations, spread over a long series of years, that any general conclusions can be hoped for. We may sow, but others must reap.

A modest and unpretending little volume, lately published, "Ornithological Notes from a South London Suburb, 1874-1909," by Mr. F. D. Power, is a useful contribution to the general stock of knowledge of a fascinating subject. The first chapters of the book, well worth publication though they are, will appeal rather to local than to general readers.

It is interesting to know what birds are to be looked for in one's own neighbourhood, and where and when they have been seen there. But there is not much to be said of thrushes and tits in Surrey or Middlesex which is not to be noted as well in other counties.

There is the usual sad tale to tell—and it is very well told—of wild life crowded out by growing human populations.

The lake in Dulwich Park, for instance, was once, Mr. Power writes, a favourite resting-place for passing ducks. He has seen "on and about this comparatively small sheet of water seven species not observed elsewhere in the district. In one day in October, 1898, there were five scaups and four shovellers on the lake, and the tufted duck nested on the island for three or four years." The common sandpiper was a regular visitor, and the kingfisher not uncommon. Boats have been placed on the water, and "the saddened bird-lover has now little chance of even an early morning note of extra interest."

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On Mitcham Common, once a favourite nesting-place of many small birds, golf balls have taken the place of eggs.

It is in the "Migration Notes," and more especially in a broadsheet table printed at the end, that the chief interest of the volume for ornithologists living beyond the "South London Suburb" will be found, and a very real interest it is.

Mr. Power has, during a long succession of autumn migrations, kept careful records of the forces and direction of the wind and of the size and direction of the flights passing within sight of his garden. In a simple and admirably clear chart, the results of his observations are shown for every day, without a single gap, for the month of October for twenty-five years.

The rather surprising conclusions to which his observations have led him would seem to find at least *prima facie* justification in the facts tabulated. He sums up as follows:—

"It used to be supposed, and by many the idea is still held, that birds come and go with wind favouring them. . . . My observations during these many years have convinced me that migrants travel best and by choice *against* the wind. . . . My experience is [he is speaking of the autumnal migration] that the only *visible* and *sustained* migration in *numbers* is invariably in a N.W., W., or S.W. direction *almost directly against* the wind, even when such approaches a stiff breeze, the birds in their progress meeting the wind on the right or left breast."

The italics are Mr. Power's.

The photograph of "the garden from which the migration notes were taken" does not, certainly, suggest exceptionally favourable opportunities.

His little book, like Alphonse Kerr's delightful "Voyage autour de mon jardin," shows how much is to be seen by "the observing eye" without going far from home.

T. DIGBY PIGOTT.

NEW DISCOVERIES AT KNOSSOS.

ON September 16 a letter appeared in the *Times* from Dr. Arthur Evans, describing the results of his excavations this year at Knossos. All archaeologists will congratulate themselves on the fact that Dr. Evans has passed out of the path of politics, which he had essayed to tread, back into the more peaceful (?) ways of archaeology. For there were many more things that we wanted to know about Knossos, and one of them has been made clear by the work of this season. The great domed pit, the *tholos*, as it seemed to be, over which part of the southern quarter of the palace was built, has been excavated to the bottom, not without danger to the workmen. And it turns out to be a great *tholos*-like reservoir, with a spiral staircase round the inside of it, which breaks off, as in other similar cases, at what must have been the average water-level. The springs that supplied this reservoir are now dry, and no doubt were so before the place was entirely filled up. This was done, as we know from the character of the potsherds found in it, in the first "Middle Minoan" age.

"In other words the reservoir itself belonged to the Early Minoan Age, and was filled in at the time of the construction of the first Palace of which we have any existing remains—the object of the work being to obtain a secure foundation for the South Porch and adjoining parts of the outer wall. The filling materials themselves were probably supplied by the levelling away at this time of the summit of the 'Tell' of Knossos in order to gain the area for the Central Court of the Palace." There was also a smaller reservoir on another part of the mound, "and from the magnitude of the work we may well conclude that some earlier predecessor of the Great Palace already existed on the site that it has since occupied."

This is an important conclusion. If we are to judge by the reservoir, the early Minoan palace was probably a great architectural work. The "Early Minoan III." architects were perhaps almost as capable as their contemporaries, the Egyptian pyramid-builders of the fifth and sixth dynasties.

In the small "palace" on the hillside west of Knossos further discoveries have been made, including a paved way with the rut-marks of ancient Minoan chariots. In this part of the site more recent remains, of classical and Roman date, constantly are found above the Minoan level; whereas in the main palace, "whether owing to a superstitious awe or to other causes, the hilltop . . . was never invaded by later habitations." A fine metope of a Doric temple, contemporary with the Parthenon sculptures, was found over the western palace.

Mr. Doll has proceeded with the work of conserving the palace buildings, and has run the great staircase another flight higher. Also the nature and composition of the frescoes have been studied by Mr. Noel Heaton.

In the tomb-field of Isopata further important discoveries have been made, owing to the *flair* of Gregori, Dr. Evans's Cypriote foreman,

"the most expert tomb-hunter of the Levant. . . The wild, long-rooted fennel, which seeks out by preference the spots above ancient cuttings, served him, as often before, as a guide, and the result was the discovery of six chamber-tombs, some of which for their size and the interest attaching to their contents and arrangement surpass any hitherto known of this class."

The date of the tombs is the second late Minoan period, about 1450 B.C., contemporary with the eighteenth dynasty of Egypt. The most remarkable point about these tombs is the information as to Minoan religion which they give us. In one tomb, where "the religious interest culminated," was found an arrangement wholly new, which "rather recalled the domestic Etruscan ideas of the after-life than anything yet known of the Minoan age." The tomb was made to resemble a house of the living, with stone-cut benches, as if for family gatherings. And at the head of the sepulchral cist were found the remains of a double-axe shrine, with an offering-vessel, in the shape of a bull's head, lying close by. These tomb-chambers seem not to have been kept open regularly, but were opened for solemn service on the anniversary of the death probably. They were rifled of their more valuable contents by robbers of the early Iron age (geometrical period), who left behind them traces by which we can identify their date.

"It will be seen that the 'Tomb of the Double Axes' has produced more definite evidence regarding the sepulchral cult and religious ideas as to the after-world than any grave yet opened in Crete or prehistoric Greece."

Dr. Evans's comparison of the interior of the tomb with that of an Etruscan grave is very apposite and suggestive. This Etruscan impression has already been given by the great painted sarcophagus found by the Italians at Agia Triada, and it is most interesting to see how a relationship between the Etruscan, Minoan, and Anatolian (Hittite) cultures in matters of religious cult is gradually becoming clearer to us.

H. R. HALL.

NOTES.

THE following is a list of those who have been recommended by the president and council of the Royal Society for election into the council for the year 1911 at the anniversary meeting on November 30:—*President*, Sir Archibald Geikie, K.C.B.; *treasurer*, Mr. Alfred Bray Kempe; *secretaries*, Sir Joseph Larmor and Dr. John Rose

Bradford; *foreign secretary*, Sir William Crookes; *other members of the council*, Mr. L. Fletcher, Dr. W. H. Gaskell, Sir David Gill, K.C.B., Dr. E. H. Griffiths, Prof. W. M. Hicks, Prof. F. S. Kipping, Major P. A. MacMahon, Mr. H. R. A. Mallock, Dr. C. J. Martin, the Duke of Northumberland, K.G., Prof. W. J. Pope, Prof. J. H. Poynting, Prof. E. Rutherford, Mr. A. E. Shipley, Mr. M. R. Oldfield Thomas, and Mr. Harold W. T. Wager.

THE Royal Society's medals have this year been adjudicated by the president and council as follows:—The Copley medal to Sir Francis Galton, F.R.S., for his researches on heredity; the Rumford medal to Prof. Heinrich Rubens, for his researches on radiation, especially of long wave-length; a Royal medal to Prof. Frederick O. Bower, F.R.S., for his treatise on the origin of a land flora; a Royal medal to Prof. John Joly, F.R.S., for his researches in physics and geology; the Davy medal to Prof. Theodore W. Richards, for his researches on the determination of atomic weights; the Darwin medal to Mr. Roland Trimen, F.R.S., for his South African bionomic researches, in large part undertaken as the outcome of correspondence with Charles Darwin; the Sylvester medal to Dr. Henry F. Baker, F.R.S., for his researches in the theory of Abelian functions and for his edition of Sylvester's "Collected Works"; the Hughes medal to Prof. John A. Fleming, F.R.S., for his researches in electricity and electrical measurements. The King has been graciously pleased to approve of the award of the Royal medals.

At the meeting of the Royal Society of Edinburgh held on November 7, the following honorary fellows were elected:—*British*: Prof. J. G. Frazer, Sir Joseph Larmor, F.R.S., Dr. Alfred Russel Wallace, O.M., F.R.S. *Foreign*: Prof. Hugo de Vries, Amsterdam; Mr. F. A. Forel, Morges; Prof. Karl F. von Goebel, Munich; Prof. J. C. Kepteyn, Gröningen; Prof. Elie Metchnikoff, Paris; Prof. A. A. Michelson, F.R.S., Chicago; Prof. W. Ostwald, Leipzig; Prof. F. W. Putnam, Harvard University; and Prof. A. F. L. Weismann, Freiburg (Baden).

It is reported from Stockholm that the Academy of Sciences has decided to award this year's Nobel prize for physics to Prof. J. D. van der Waals, of Amsterdam, for his work on gases and liquids.

WE regret to see the announcement of the death of Mr. Theodore Cooke, for many years principal of the Poona College of Science, at seventy-four years of age.

A REUTER telegram from Wellington, New Zealand, states that Mr. Priestly, who accompanied Sir Ernest Shackleton, as geologist, on his Antarctic expedition, is going out with Captain Scott in the place of Mr. Thompson, who is ill.

THE date of the annual exhibition held by the Physical Society of London, which was fixed some time ago for December 13, has been altered to Tuesday, December 20. The exhibition will be open in the afternoon as well as in the evening.

THE annual Huxley memorial lecture of the Royal Anthropological Institute will be delivered on Tuesday, November 22, at the theatre of the Civil Service Commission, Burlington Gardens, W., by Prof. W. Boyd Dawkins, F.R.S., whose subject will be "The Arrival of Man in Britain in the Pleistocene Age."

MRS. TYNDALL has presented to the Royal Institution two Nicol's prisms, constructed for the lectures on light given by Dr. Tyndall in America in 1872, and used by him sub-