

GOVERNMENT NOTIFICATION.—No. 41.

His Excellency the Governor has been pleased to appoint Subadar AHMED DIN, The Hongkong and Singapore Company of the Asiatic Artillery, to be his Honorary Aide-de-Camp.

By His Excellency's Command,

T. SERCOMBE SMITH,
Acting Colonial Secretary.

Colonial Secretary's Office, Hongkong, 28th January, 1899.

GOVERNMENT NOTIFICATION.—No. 42.

The following Circular Despatch and its enclosure are published for general information. Any person willing to assist the Government in making the collections referred to should communicate at once with Mr. FORD, Superintendent of the Botanical and Afforestation Department. The transmission to England of the specimens collected will be undertaken by the Government.

By Command,

T. SERCOMBE SMITH,
Acting Colonial Secretary

Colonial Secretary's Office, Hongkong, 26th January, 1899.

CIRCULAR.

DOWNING STREET,
6th December, 1898.

Sir,—In my Circular despatch of the 19th of August last, I referred to an intended investigation of Malaria.

A Commission has now been appointed for the purpose and is about to proceed to Africa.

The Commissioners will report, from time to time, to a Committee appointed jointly by the Royal Society and myself, who will exercise a general supervision over the enquiry.

It has been suggested by this Committee, that, in view of the possible connection of Malaria with mosquitoes, it is desirable to obtain exact knowledge of the different species of mosquitoes and allied insects in the various tropical Colonies. I will therefore ask you, if there are facilities for the purpose, to be good enough to take the necessary steps at your early convenience to have collections made of the winged insects in the Colony which bite men or animals.

I enclose a printed copy of directions which have been drawn up by the British Museum for the guidance of those who may be employed on the work, and would add that several specimens of each kind of insect should be obtained and that they should be sent direct to the British Museum (Natural History), Cromwell Road, London, S.W., to be examined and classified. A first series of the specimens will be retained by the Museum, whilst the duplicates will be available for distribution as may be desired.

As the question of the scientific investigation of Malaria is one to which I attach great importance, I trust that every effort will be made to carry out as speedily and as thoroughly as possible the directions contained in this despatch.

I have the honour to be,

Sir,

Your most obedient, humble Servant,

J. CHAMBERLAIN.

The Officer Administering the Government of
HONGKONG.

HOW TO COLLECT MOSQUITOES
(CULICIDÆ).

LIST OF ARTICLES REQUIRED FOR COLLECTING AND PREPARING MOSQUITOES.

ONE entomologist's collecting-net of book-muslin (one or two spare net-bags should be taken in case the one in use gets torn).

One dozen glass-bottomed pill-boxes (1½ to 2 in. in diameter is about the best size).

A cyanide killing-jar, or materials for making same, as follows:—

¼ lb. of cyanide of potassium (in lumps).

1 lb. of plaster of Paris.

A glass jar with wide mouth and closely fitting lid.

En
Or
These
go a ve
Co
Gu
Ca
prepar
Ne
A
Co
pinning
A s
cork-car

It
mosquito
wings an
otherwis
determin

Spe

Mos
specimen
taken, by

In c
each sex

The
blood) by
the anter
while the
species b

For
the insect
to pull of
dows in t
bottomed
mosquito
cyanide k
mixture
should ne
turned o
pulations

* These
tops, as is of
in the rains,

† A cyanide
prepare one t
sized killing-
cover the bot
powdered cya
Paris to the
with water to
jar owing to
final layer.
should be reg
the top layer
should never

Entomological forceps (two pairs), with curved ends, for holding pins.
 One ounce No. 20 entomological pins (D. F. Tayler and Co., New Hall Works, Birmingham). These pins are sold in boxes at 7s. 6d. per ounce, and as the pins are exceedingly fine, an ounce will go a very long way).
 Common pins (three or four packets).
 Gun-wad punch, No. 20 bore.
 Cards (2-sheet Bristol Board) from which to punch discs; a supply of the latter should be prepared ready for use.
 Needles (two or three) mounted in handles, for arranging legs and wings.
 A Platyscopic Lens:—this is indispensable.
 Cork-carpet or pith—one or two sheets about 6 in. square, on which to perform the operations of pinning, etc.
 A strongly-made wooden box (a cigar-box will do), in the bottom of which is fixed a layer of cork-carpet or pith (if the latter is used it should be not less than half an inch thick).

IMPORTANCE OF SENDING HOME SPECIMENS FOR DETERMINATION
 IN THE BEST POSSIBLE CONDITION.

It should be borne in mind that, for the purpose of the scientific determination of species, *mosquitoes cannot be collected with too great care*. As important specific characters are furnished by the *wings* and *leg*s, it is of the utmost consequence that these should not be denuded of their scales, or otherwise injured; *unless attention is paid to this point the specimens will probably be quite worthless for determination*.

SPIRIT NOT TO BE USED.

Specimens for determination must *on no account* be placed in spirit.

SPECIMENS TO BE PINNED IMMEDIATELY THEY ARE DEAD.

Mosquitoes should in all cases be pinned, and that as soon as possible after death; duplicate specimens for dissection can, of course, be preserved in spirit, but if this is done care must be taken, by the use of corresponding labels or numbers, to prevent confusion between species.

NUMBER OF SPECIMENS OF EACH SPECIES REQUIRED.

In collecting specimens of a species of mosquito for determination some *half dozen* examples of *each sex* should, if possible, always be obtained.

HOW TO DISTINGUISH THE SEXES.

The harmless male mosquitoes can be distinguished from the females (which alone bite and suck blood) by the possession of plumose antennæ and palpi, forming tufts in front of the head; in the females the antennæ, though long, are nearly bare (having whorls of only short hair at the bases of the joints), while the palpi in the case of females of the typical genus *Culex*, to which the majority of the described species belong, are quite short.

METHOD OF COLLECTING AND KILLING.

For capturing mosquitoes in the open an entomologist's collecting net is necessary, from which the insects can be transferred to glass-bottomed pill-boxes; in doing this great care must be taken not to pull off the legs; inside buildings it is possible, with care, to capture mosquitoes on walls and windows in the pill-boxes themselves. In any case mosquitoes should be collected alive in the glass-bottomed pill-boxes*; if care is taken, several specimens can be got into one pill-box. To kill the mosquitoes the box is opened a fraction of an inch on one side, and placed for a few minutes in a cyanide killing-jar,† which must, of course, be closed. As soon as the insects are quite dead (if the mixture in the jar is of reasonable strength from three to five minutes is sufficient, and mosquitoes should not be allowed to remain exposed to the effects of the cyanide longer than this) they should be turned out on to a sheet of cork-carpet or pith; they should be touched as little as possible, the manipulations necessary in arranging the wings and legs being performed with a needle.

* These boxes can be obtained from any dealer in natural history apparatus, but care should be taken to see that the *bottoms*—and not the tops, as is often the case—are made of glass. Since the boxes are constructed of cardboard, they are liable in tropical countries to go to pieces in the rains, and to prevent this they should be covered with glazed jaconet (stuck on with liquid glue) and then coated with Aspinall's enamel.

† A cyanide killing-bottle can be procured ready for use from Hinton and Co., Bedford Street, London, W.C., or any other chemist will prepare one to order, but when mosquitoes (or indeed *any* Diptera) are collected in the manner here advised it is preferable to make a large-sized killing-jar for oneself as follows:—Take any fairly large glass jar (such as a pickle-bottle) with a wide mouth and closely fitting lid, and cover the bottom with a layer of dry plaster of Paris to the depth of half an inch; pour in above this a layer equal in depth consisting of powdered cyanide of potassium, mixed with rather more than its bulk of dry plaster of Paris; cover this mixture with a layer of dry plaster of Paris to the depth of a quarter of an inch or so, and pour in above the whole a layer, half an inch in depth, consisting of plaster of Paris mixed with water to the consistency of cream. As soon as the top layer of plaster is dry the jar is ready for use. To obviate the risk of cracking the jar owing to the heat evolved when plaster of Paris is mixed with water, it may be advisable to stand the jar in warm water before adding the final layer. The exact amount of cyanide of potassium to be used is of no great consequence, but in the case of a properly prepared jar the odour should be readily perceptible on removing the lid; if it is not, the reason may be that the mixture is too dry, when a little water poured on to the top layer will probably set matters right. After some months' use the cyanide loses its efficacy (to obviate this so far as possible the jar should never be allowed to remain open), and the mixture must then be renewed.

TO PIN A MOSQUITO.

Take a card disc and write on it all the data connected with the specimen to be pinned, as follows:—(1) Name of *locality*, including *altitude* if necessary; (2) *date*—day, month, year—thus, 9. 11. 98; (3) *collector's name*; (4) any *remarks of interest*, e.g., “Most troublesome species in district”; “Abundant in bamboo-jungle”; “Uncommon,” etc. Place the disc on a sheet of cork-carpet or pith, and picking up with the entomological forceps one of the fine No. 20 pins, thrust about one-third of an inch of it through the centre of the disc; in doing this the pin should be held by the forceps below the middle, otherwise, owing to its fineness, it may bend and fail to pass through the card. Lay the specimen *on its back* (turning it over with the aid of a needle or one of the No. 20 pins held in the forceps), and thrust the pin, which now carries the disc, through the centre of the thorax, between the bases of the legs, until the tip of the pin projects one-sixth of an inch beyond the dorsal surface of the thorax; * invert the disc (the specimen will then be right side up), and thrust an ordinary pin through the disc near the margin for the purpose of carrying both disc and specimen. The next and last thing to be done is to arrange the legs and wings as far as possible; i.e., the wings must be made to project at an angle from the body, and not allowed to remain closed, and the legs must be disposed symmetrically on the card disc so that all parts of them can be readily seen, instead of being left crumpled up beneath the body. These operations must be performed as gently as possible with the help of a needle mounted in a handle, or by the aid of a No. 20 pin held in the forceps, and care must be taken that hairs and scales are not rubbed off in the process. As the tissues contract in drying, the legs and wings are very apt to get pulled out of place, and, to correct these changes, the specimens should be examined once or twice during the next day or two after being pinned.

TRANSMISSION OF SPECIMENS TO ENGLAND.

Pinned specimens of mosquitoes, like those of other insects, rapidly develop mould during the rainy season in tropical countries, and since mouldy specimens are practically worthless for purposes of scientific determination, the insects should be sent home as soon as possible after being collected. To contain the specimens, if a proper entomological store-box is not available, any small strongly-made box (such as a cigar-box) will serve, in the bottom of which a layer of cork-carpet or pith (not less than half an inch thick, in the case of the latter) is firmly fixed. The greatest care must be taken to prevent specimens getting loose and rolling about in transit, since in this way a single loose disc might easily destroy or hopelessly damage all the other specimens in the box. To prevent this the pins supporting the cards should be inserted as tightly as possible into the cork-carpet or pith, and they should all be driven in to the same level; if this is done a sheet of soft paper (newspaper does very well) can be *fixed* into the box, resting on the heads of the supporting pins, in order to minimise the damage should a disc happen to get loose. The box containing the specimens should be well wrapped in cotton-wool, or similar material, and firmly packed in an outer box for transmission (by Parcel Post) to England.

N.B.—NOT ONLY MOSQUITOES, BUT ALL DIPTERA SHOULD BE COLLECTED, PREPARED, AND SENT HOME IN THE MANNER ABOVE DESCRIBED.

The above instructions, though drawn up with special reference to mosquitoes, are equally applicable to the collecting of Diptera in general, except that in the case of the large forms, such as horse-flies (Tabanidæ), robber-flies (Asilidæ), etc., it is not necessary to use so fine a pin as a No. 20 (D. F. Tayler and Co.'s entomological pin No. 5—price 1s. 6d. per ounce—would do instead).

ADDRESS FOR SPECIMENS.

Specimens of mosquitoes (or other *Diptera*) intended for the British Museum should be directed to

THE BRITISH MUSEUM

(NATURAL HISTORY),

CROMWELL ROAD,

LONDON, S.W.

All communications on the subject should be addressed to the Director.

* Should it be found impracticable to proceed in the manner here prescribed, owing to the difficulty of making the specimen lie in the required position on its back, it may be pinned in the ordinary way through the middle of the thorax from the *dorsal* side; in this case, however, the specimen must be *pinned first* (i.e., before it is mounted on the card disc); it should be drawn two-thirds of the way up the pin, and the latter should then be thrust through the disc, holding the pin with the forceps *below* the specimen; mount the disc on a common pin, as in the first method.