

(e) Mineral analyses.

Salts.	
Qualitative test for one constituent,	\$ 5.00
Complete qualitative analysis,	15.00
Quantitative analysis, each constituent,.....	10.00
Metallic ores.	
Antimony, Tin, Silver, Gold, qualitative,.....	10.00
Do. quantitative,.....	25.00
General qualitative analysis,	15.00
Coal.	
General analysis (moisture, volatile matter, coke, ash, specific gravity, and sulphur),	25.00
Determination of any single character as moisture,	5.00
Ultimate analysis (carbon, hydrogen, nitrogen, oxygen, sulphur),.....	50.00
Graphite.	
Moisture, carbon, ash, quantitative,	25.00

(f) Building materials.

Cement.	
Quantitative analysis,	25.00
Mortar.	
Quantitative analysis,	25.00
Lime.	
Quantitative analysis,	10.00

(g) Kerosene.

Flashing point (Abel close test),	2.50
Fire test,	2.50
Gravity,	5.00

(h) Toxicological examinations.

Qualitative examination,.....	50.00
Quantitative examination,	100.00

Charges for articles not enumerated in the above tariff and any further information can be obtained on application to the Government Analyst.

Quantities which should be submitted for analysis.

Wine, Brandy, Vinegar, Milk, at least.....	1 bottle (pint).
Butter, at least	$\frac{1}{4}$ lb.
Water (examination for potable purposes), at least	$\frac{1}{2}$ gallon.
Mineral water, at least	2 gallons.
Substance for mineral analysis, at least	2 lbs.

GOVERNMENT NOTIFICATION.—No. 665.

The following Report by Dr. J. C. THOMSON, M.D., M.A., on the results of his examinations of mosquitoes during the year ending 30th September, 1901, is published:

By Command,

J. H. STEWART LOCKHART,
Colonial Secretary.

Colonial Secretary's Office, Hongkong, 7th November, 1901.

HONGKONG, 18th October, 1901.

SIR,—I have the honour to submit for the information of His Excellency the Governor the results of a systematic examination and classification of the mosquitoes that prevail in Hongkong and its Dependencies, on which I have been engaged during the past twelve months. For some months previous to September, 1900, I was working at the subject as I had opportunity, but my field of observation was limited to the Colony itself until in that month the Honourable F. H. MAY, C.M.G., Captain Superintendent of Police, kindly consented to my proposal that I should be supplied with at least one dozen mosquitoes from each of the police stations throughout Hongkong itself and the New Territory once a week for a year. As the police stations are approximately equally scattered over the whole area, the mosquitoes that have been sent to me may be assumed to fairly satisfactorily represent the actual relative prevalence of these insects in this locality.

2. I distributed a number of glass test-tubes to each of the thirty-six police stations, with general instructions for the catching and transmitting of the insects in such a way as to avoid injury to them. They were to be caught by means of the glass tubes, killed by a whiff of tobacco-smoke, and sent enclosed in match-boxes to the Central Police Station, from which they would be duly forwarded to

me. It was requested that about two-thirds of each consignment should be caught in the evening, or from mosquito-curtains in the early morning, and the remainder from species seen flying about in the day time; and further that no selection of any kind should be made, the first dozen or so caught on any given date being sent.

The arrangements made have been carefully carried out by the officers in charge of the stations, with few exceptions; and I beg to express my thanks to the Captain Superintendent of Police, Chief-Inspector Mackie, and the officers of the Police Force for their hearty co-operation in this research.

3. During the twelve months, 1st October, 1900, to 30th September, 1901, 32,266 insects have been sent to me from the police stations. Of these, 31,390 proved to be mosquitoes; the others were chiefly insects belonging to cognate families, such as fungus gnats (*Mycetophilidæ*), midges (*Chironomidæ*), sand flies (*Simulidæ*), &c.

1,169, *i.e.*, 3.7 per cent., were *Anopheles*, of three species, and 30,221, *i.e.*, 96.3 per cent., were *Culex*, of twelve species. As is shown in Appendix II., the number of species of *Culex* is probably considerably larger, some that I describe as varieties being perhaps distinct species.

4. I enclose a Table (Appendix I.) showing in detail my observations during the year as regards the various police stations. I show for each station the number of specimens received, the number of *Anopheles* and *Culex* respectively, and the names of the species of both that have come from the station. I describe the different species by letters corresponding to those used in the Systematic Account of Hongkong Mosquitoes given below (Appendix II.). Similar tables showing the same facts, but without the names of species, for each month and each quarter of the year are included in my quarterly reports on this subject, which have appeared in the Government Gazette.

5. The monthly percentage of *Anopheles* and *Culex* has been as follows:—

	Mosquitoes examined.	Anopheles.		Culex.	
		Number.	Per cent.	Number.	Per cent.
October,	401	106	26.4	295	73.6
November,	796	50	6.3	746	93.7
December,	2,342	138	5.9	2,204	94.1
January,	3,380	143	4.2	3,237	95.8
February,	2,524	35	1.4	2,489	98.6
March,	1,586	49	3.1	1,537	96.9
April,	3,501	115	3.3	3,386	96.7
May,	5,476	116	2.1	5,360	97.9
June,	3,562	111	3.1	3,451	96.9
July,	2,582	138	5.3	2,444	94.7
August,	2,296	88	3.8	2,208	96.2
September,	2,944	80	2.7	2,864	97.3
Last Quarter, 1900,	3,539	294	8.3	3,245	91.7
First Quarter, 1901,	7,490	227	3.	7,263	97.
Second Quarter, 1901,	12,539	342	2.7	12,197	97.3
Third Quarter, 1901,	7,822	306	3.9	7,516	96.1
The Twelve Months,	31,390	1,169	3.7	30,221	96.3

6. I have arranged these facts regarding *Anopheles* in the form of a Chart, which I enclose; and through the kindness of Dr. F. J. A. BERINGER, Civil Surgeon, R.A.M.C., I am able to place alongside of them the monthly percentage of cases of Malaria that have occurred among European troops stationed in Hongkong during the past five years. This Malaria Chart gives the most accurate information possible as to the occurrence of the disease in Hongkong, as it records the incidence of Malaria in large bodies of men who are bound to be either on parade or under careful medical observation. The result is a remarkable testimony to the truth of the Mosquito-Malaria Theory. The *Anopheles* curve is to a large extent almost parallel with that of Malaria; and consideration of the Malaria curve for the preceding years shows that this is no mere coincidence. The two first of the thirteen months' observations recorded on the *Anopheles* chart are too high, owing to the fact that some of the more healthy stations did not fall into line till late in October, and I was consequently before that time receiving an undue proportion of insects from the very malarial stations. This requires to be allowed for in comparing the two curves. The *Anopheles* curve reached its lowest point in February; the Malaria curve reached its minimum, or within a fraction of it, in all the five years shown on the chart in the same month. The *Anopheles* curve reached its highest point last year in October and this year in July; the Malaria curve reached its maximum in October, 1896, in November, 1897, in August, 1898, in August, 1899, in August, 1900, with a secondary rise in October, and in July of this year (to date).

7. Another noteworthy point in connection with the combined Chart is the sudden drop in both curves from July of this year, when theoretically, and in accordance with previous experience, both should have continued to rise. The facts accounting for this are interesting. On account of the large number of cases of Malaria that occurred in the garrison this year, a general issue of quinine was ordered to all the soldiers, except those in special circumstances where it seemed unnecessary, *e.g.*, at Mount Austin Barracks. This was commenced in August, and at once there is a drop unusual at that season in the Malaria curve. On the other hand, about the end of June at the request of the Captain Superintendent of Police I drew up a series of simple instructions for the destruction of the larvæ of mosquitoes and their breeding-places. A General Order embodying these instructions was issued, directing that officers in charge of all police stations should carry them into effect, so far as possible, for their own neighbourhoods. This was done more or less thoroughly from the beginning of July, and the result was a rapid and steady diminution of the Anopheles frequenting the stations. I enclose a copy of my instructions to the police, which were necessarily brief and elementary, in Appendix III.

8. No Anopheles were found among mosquitoes sent to me from the following stations:—

No. 5, No. 6, No. 7, No. 8, Kennedy Town, Mount Gough, Shauiwan, Tsim Sha Tsui, Stone Cutters' Island, Hung Hom, and Kat O.

9. The following Table shows the stations from which Anopheles were sent to me, and the percentage of Anopheles among the total mosquitoes received from those stations:—

	Mosquitoes examined.	Anopheles.		Culex.	
		Number.	Per cent.	Number.	Per cent.
No. 1 Station,	1,261	6	0.5	1,255	99.5
No. 2 Station,	575	1	0.2	574	99.8
No. 3 Station,	1,178	1	0.1	1,177	99.9
Pokfulam,	852	21	2.5	831	97.5
Aberdeen,	688	7	1.	681	99.
Stanley,	963	15	1.6	948	98.4
Shek O,	748	116	15.5	632	84.5
Tsat Tsze Mui,	600	47	7.8	553	92.2
Yaumati,	1,066	1	0.1	1,065	99.9
Fuk Tsun Heung,	558	1	0.2	557	99.8
Kowloon City,	1,717	1	0.1	1,716	99.9
Sha Tin,	572	43	7.5	529	92.5
Sai Kung,	552	8	1.4	544	98.6
Tai Po,	809	191	23.6	618	76.4
Sha Tau Kok,	4,401	414	9.4	3,987	90.6
Sheung Shui,	815	10	1.2	805	98.8
San Tin,	837	14	1.7	823	98.3
Au Tau,	1,841	113	6.1	1,728	93.9
Ping Shan,	245	12	4.9	233	95.1
Tai O,	399	38	9.5	361	90.5
Tung Chung,	226	78	34.5	148	65.5
Ch'ung Chau,	4,704	1	0.02	4,703	99.98
Lamma,	604	30	5.	574	95.

10. In Appendix II. I describe systematically the mosquitoes that prevail in the Colony, examining in each case the wings, legs, head appendages, thorax, abdomen, and size. The size I express in millimetres ($\frac{1}{25}$ inch). It will be noted that, so far as Hongkong is concerned, the wings of Anopheles are in all species spotted, and those of all forms of Culex unspotted.

There are three species of Anopheles, a sub-species of Anopheles Sinensis, and two species which have been recognised as new species, not thus far observed elsewhere, by Mr. F. V. THEOBALD, Entomologist at the British Museum, to whom I submitted them. He has named one of them Anopheles Maculatus from its markings, the other Anopheles Minimus from its minute size. The former I at first believed to correspond to Anopheles Costalis of West and South Africa, but there are specific differences. I need not here enter into descriptive details, which I have set forth at length in the Appendix.

Anopheles Sinensis breeds chiefly in the rice-fields and the ditches surrounding or draining them, the other two chiefly in the ravines; but they do not confine themselves exclusively to their usual habitats.

As to the relative prevalence of the three species of Anopheles, I am not able to speak as regards the 294 Anopheles which I received during the last quarter of 1900, but of 875 received during the three quarters of 1901 included in this research, 483 were Anopheles Sinensis, 249 Anopheles Maculatus, and 143 Anopheles Minimus.

11. I have differentiated twelve species of *Culex*, which I describe at length in the Appendix. There are probably considerably more, as some of the varieties of certain species which I describe may be regarded by entomologists as distinct species. I do not attempt to follow Theobald in his new classification of mosquitoes, just published in the *Tropical Journal*, into twenty-four different genera, breaking up the old genus *Culex* into some twenty new genera, based on the arrangement of the scales which cover the insects. For instance, he now describes *Culex Scutellaris* and *Culex Obturbans*, two of the most common of the Hongkong mosquitoes, as *Stegomyia Scutellaris* and *Armigeres Obturbans*.

Culex Fatigans, *Culex Scutellaris*, *Culex Obturbans*, and *Culex Concolor* have been described before. *Culex Anulus*, *Culex Sericeus*, and *Culex Reesii* are new species, and have been named by Mr. Theobald from specimens which I submitted to him. *Culex Reesii* he has so called from our mutual friend Dr. D. C. Rees, lately Superintendent of the London School of Tropical Medicine, who put me in communication with Mr. Theobald. The insects which I have indicated by the letters, "n", "o", "p", "r", "r'", and "s", I have carefully described, but not named. "p" may be *Culex Fuscus*; the others are, I think, new species, but this question I shall remit to Mr. Theobald at the British Museum.

Culex Scutellaris is the black and white striped mosquito so common all over the Colony during the day time; *Culex Fatigans* and *Culex Reesii* are the equally common brown mosquitoes, to be found everywhere and at all seasons in the evening; *Culex Obturbans* is the very large dark mosquito, also very widely prevalent. The others are less abundant, but for the most part occur pretty generally throughout the Colony.

It may be noted in passing that *Culex Fatigans* is the most usual intermediate host of the blood parasite, *Filaria Nocturna*, the cause of Elephantiasis and its kindred diseases, by no means uncommon in this locality.

While *Anopheles* as a rule only uses for breeding purposes clean water in more or less natural collections, the various species of *Culex* lay their eggs wherever stagnant water exists, in broken dishes, empty tins, flower pots, water tanks or barrels, drain traps, and the like. Nothing is too dirty to have its appropriate mosquito developing in it. *Culex Obturbans* is the most loathsome of all in its larval state, finding its most favourable conditions in decomposing urine.

12. I do not propose to enter here into details of prophylaxis against these insects, which I have dealt with in special reports; but in view of the approach of the cold season I desire to direct attention to observations which I made during last winter.

I was able to find the larvæ of *Anopheles* abundantly in the nullahs throughout the whole winter, in scarcely diminished numbers, though there were few in the pupa stage, and development at that season is evidently very slow or arrested.

I was able to note the effects of severe cold at the beginning of February. On 1st February, I had made a careful examination of the Kennedy Town nullah, and found *Anopheles* larvæ plentiful. On the 3rd there was a sudden rapid drop in the temperature, and when I examined the stream again on the 5th there were few larvæ to be seen. It seemed as if they had been killed by the cold. But fortunately I had some larvæ under observation at the time in a glass jar in my verandah. Under the influence of the cold these became torpid or sluggish, and most of them seemed dead. On the 7th, however, the sun shone out brightly, and the seemingly dead ones as well as the others became quite lively again. It is probable, therefore, that much of the diminution in numbers of the larvæ in the ravines during the winter is more apparent than real, since they are most easily recognised in ordinary circumstances by their very characteristic movements when disturbed.

13. I mention this observation now in order that I may urge that efforts already being made by Government, and by owners of private property as well, to eradicate these pests should be redoubled during the coming winter months. New generations are during these months being developed either not at all, or at least very slowly, and therefore such efforts are certain to be very much more effective than during the summer. From experience in Hongkong, kerosene is at once the cheapest, safest, and most efficient larvicide.

I further urge upon householders in malarious parts of the city the desirability of making an effort to destroy as many as possible of the hibernating adult insects during the winter months, by occasionally fumigating with sulphur all servants' quarters, basements, boxrooms, stables, &c., where in ordinary circumstances the insects might remain undisturbed in dark corners for long periods.

I have the honour to be,

Sir,

Your obedient Servant,

JOHN C. THOMSON, M.D., M.A.

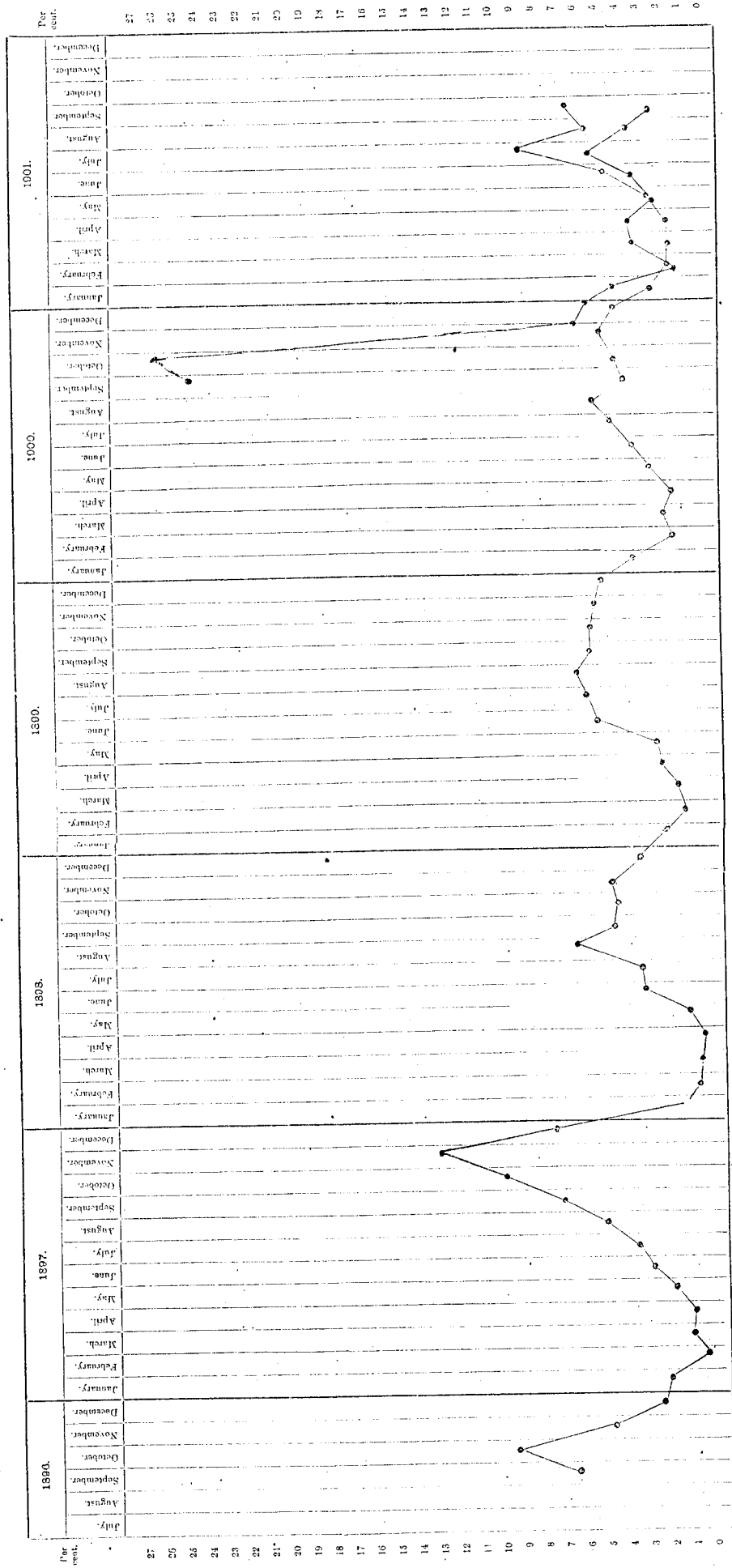
Dr. J. M. ATKINSON,
Principal Civil Medical Officer,

&c.,

&c.,

&c.

CHART showing the Monthly Percentage of Malaria among the European Troops stationed in Hongkong, during five years—September, 1896, to September, 1901; and the Monthly Percentage of Anopheles examined during thirteen months—September, 1900, to September, 1901.



Malaria Curve — Black Line.
Anopheles Curve — Red Line.

Appendix I.

PREVALENCE OF MOSQUITOES, DURING THE YEAR ENDING 30TH SEPTEMBER, 1901.

NAME OF STATION.	Specimens received.	ANOPHELES.		CULEX.		Other Genera.
		Number.	Species.	Number.	Species.	
Central Station	Nil.	...	...	...	...	...
No. 1 Station	1,360	6	a b	1,255	efhikn	99
No. 2 "	576	1	b	574	efhiknr	1
No. 3 "	1,334	1	c	1,177	efhiknor	156
No. 5 "	107	...	...	107	ehir	...
No. 6 "	71	...	...	71	ehino	...
No. 7 "	462	...	...	447	efhik	15
No. 8 "	63	...	...	62	efhiko	1
Kennedy Town	764	...	...	716	efhikn	48
Mt. Gough	63	...	...	61	efhi	2
Pokfulam.....	872	21	a b c	831	efhikmnor	20
Aberdeen.....	735	7	b	681	efghikmnr	47
Stanley	980	15	a b c	948	efhiknor	17
Shek O.....	750	116	a	632	efhimno	2
Shaukiwan	1,579	...	...	1,538	efhikmnor	41
Tsat Tsze Mui	607	47	a b c	553	efhikn	7
Tsim Sha Tsui	678	...	...	676	efhikn	2
Yaumati	1,069	1	a	1,065	efghiknrs	3
Fuk Tsun Heung	572	1	a	557	efhiknor	14
Stone Cutters' Island.....	81	...	...	80	ehkon	1
Hung Hom	729	...	...	725	efhinor	4
Kowloon City.....	1,726	1	a	1,716	efhiknor	9
Sha Tin Gap	Nil.	...	...	...	...	...
Sha Tin	662	43	a b c	529	efghiknops	90
Sai Kung.....	648	8	a b c	544	efghiku	96
Tai Po.....	819	191	a b c	618	efhiknopr	10
Sha Tau Kok	4,428	414	a b c	3,987	efhiknopr	27
Kat O	709	...	...	696	efhi	13
Sheung Shui	829	10	a b	805	efhikmnor	14
San Tin	916	14	a b c	823	efhiknor	79
Au Tau	1,853	113	a b c	1,728	efhikmnor	12
Ping Shan	251	12	a b	233	efhikn	6
Tai O	408	38	a b c	361	efghiko	9
Tung Chung	233	78	a	148	efhikm	7
Cheung Chau	4,704	1	b	4,703	efhikn	...
Lamma.....	628	30	a b c	574	efhiknor	24
Total.....	32,266	1,169	a b c	30,221	efghikmnoprs	876
Less.....		876				
Net Total.....		31,390				

Appendix II.

AN ACCOUNT OF HONGKONG MOSQUITOES.

A.—*Anopheles Sinensis* (Wiedemann).

Sub-species: *Annularis*.

Wings spotted. Dark brown costa, with two lighter interruptions. Dark brown spots irregularly placed on wing field.
 Legs brown. White-banded at joints. White bands at apices of tarsi.
 Antennæ and palpi brown. Proboscis darker brown.
 Thorax brown. Linear markings of a deeper brown.
 Abdomen brown, unbanded.
 Length, 5 mm.

B.—*Anopheles Maculatus*.

A new species.

Wings spotted, transparent. Four linear black spots along costa, with three pale intervals. Also faint linear spots on wing field at points on course of veins.
 Legs black, white-banded. White bands at apices of tarsi.
 Antennæ grey. Palpi black, white-banded, and white-tipped. Proboscis dark-brown, with pale tip.
 Thorax brown, with grey-white tomentum.
 Abdomen brown, unbanded.
 Length, 4 mm.

C.—Anopheles Minimus.

A new species. At first sight appears simply a dwarf variety of *Anopheles Maculatus*. All its markings are less distinct, and it is exceedingly minute.

Wings spotted, transparent. Four linear black spots along costa, with three pale intervals. Also faint linear spots on wing field. The black is not so deep as in the previous species.

Legs black, white-banded. Faint white bands at apices of tarsi.

Antennæ grey. Palpi black, white-banded, and white-tipped. In some specimens the palpi are brown and unbanded.

Proboscis dark brown, with pale tip.

Thorax brown, with linear darker markings.

Abdomen brown, unbanded.

Length, $2\frac{1}{2}$ mm.

E.—Culex Fatigans (Wiedemann).

Wings unspotted. Transparent.

Legs brown. Unbanded.

Antennæ, palpi, and proboscis brown.

Thorax brown, with golden scales, and with a median and two lateral dark bare lines.

Abdomen banded. Segments brown, with white bands at bases.

Length, 4 mm.

F.—Culex Anulus.

A new species.

Wings unspotted. Dark veins.

Legs brown. White-banded at joints. White bands at apices of tarsi.

Antennæ grey. Palpi brown. Proboscis brown, with broad white band at the middle of it.

Thorax brown, with lighter linear markings.

Abdomen brown, with white bands at bases of segments.

Length 3 mm.

G.—Culex Sericeus.

A new species.

Wings unspotted, brown, transparent, with prominent veins.

Legs brown, unbanded.

Antennæ grey. Palpi and proboscis brown.

Thorax brown, with golden-yellow tomentum.

Abdomen speckled, blackish brown, with yellowish white bands at bases of segments.

Length, 5 mm.

H.—Culex Reesii.

A new species.

Wings unspotted. Greyish brown.

Legs yellowish brown. Unbanded.

Antennæ grey. Palpi brown, with black tip in male. Proboscis brown.

Thorax brown, with faint linear marking.

Abdomen speckled, blackish brown, with faint pale bands at bases of segments.

Length, 4 mm.

I.—Culex Scutellaris. (Walker).

(*Stegomyia Scutellaris.* Theobald).

There are several varieties of this insect, differing markedly in size. There is also one in which the median white line, while present on the head, is absent from the thorax, which is a very dark brown. Probably some of these would by entomologists be described as different species. The one I describe may be regarded as the type. The different varieties occur in different parts of the Colony.

Wings unspotted. Greyish, with dark scales on veins.

Legs dark, with whitish femur, and with white bands at bases of tarsi.

Antennæ grey. Palpi white-tipped in female, with four white bands in male. Proboscis black.

Head and thorax with median white line, with silvery white spots on sides of thorax.

Abdomen black, with silvery white bands at bases of segments.

Length, $4\frac{1}{2}$ mm.

K.—Culex Obturbans. (Walker).

(*Armigeres Obturbans.* Theobald).

Mr. Theobald recognised the specimens of this which I sent him as *Culex Obturbans*, but many of the specimens agree more closely with the *Culex Ventralis* of Walker. It may be that sub-varieties of both, approaching each other in characteristics, are present in the Colony. They are both large species. While I adopt the name *Culex Obturbans*, the following description of the insect, as it is now in large numbers before me, is very like the description of *Culex Ventralis* in Giles's Handbook of Mosquitoes.

Wings greyish, unspotted. Veins black, with fringe of large scales.

Legs almost black, unbanded. Femur pale underneath.

Antennæ grey. Palpi brown. Proboscis black.

Thorax brownish black, unadorned above, with white spots on sides.

Abdomen black, dorsally unbanded, but with pure white bands on under surface.

Length, $6\frac{1}{2}$ mm.

In some specimens the thorax and abdomen are more brown than black.

M.—Culex Concolor. (R. Desvoidy).

Wings unspotted, clear, transparent. Veins almost nude.

Legs yellowish, unbanded.

Antennæ pale brown. Palpi brown. Proboscis yellowish.

Thorax reddish brown, with three indistinct brown hairy lines.

Abdomen yellowish brown, with pale yellow bands at apices of segments.

Length, 7 mm.

N.

Probably a new species.

Wings smoky, owing to thick black scales on veins, unspotted.
 Legs black, unbanded.
 Antennæ, palpi, and proboscis black.
 Thorax black.
 Abdomen dark brown. Unbanded.
 Length, 5 mm.

O.

Probably a new species.

Wings unspotted, transparent, with dark scales on veins.
 Legs black, with white bands on bases of tarsi.
 Antennæ grey. Palpi black, and in the male with white band at middle. Proboscis dark brown.
 Thorax brown.
 Abdomen brown. Unbanded.
 Length 4 mm.

There is a variety of this insect with a darker thorax and abdomen, greenish-black in colour.

P.—Probably *Culex Fuscus* (Wiedemann).

Wings unspotted. Dark owing to thick covering of large scales on veins.
 Legs brown, unbanded.
 Antennæ grey. Palpi and proboscis brown.
 Thorax brown, with grey tomentum.
 Abdomen black, with faint grey bands at bases of segments.
 Length, 4 mm.

R.

Under "r" I have included two small dark species, which to the naked eye look alike, but show marked differences on examination with a lens. I shall describe them as "r" and "r'."

R.—Probably a new species.

Wings unspotted. Veins thickly covered with dark scales.
 Legs dark brown, unbanded.
 Antennæ, palpi, and proboscis dark brown.
 Thorax very dark brown. Fine linear markings of grey hairs.
 Abdomen black. With faint grey bands at bases of segments.
 Length, 3½ mm.

R'.

Probably a new species.

Wings unspotted, transparent. Veins almost nude.
 Legs dark reddish brown, unbanded.
 Antennæ, palpi and proboscis black.
 Thorax black. Faint pale linear marking.
 Abdomen black, unbanded.
 Length, 4 mm.

S.

Probably a new species.

Wings unspotted, greyish, with dark scales on veins.
 Legs dark, with whitish femur, and white bands at bases of tarsi.
 Antennæ greyish. Palpi white-tipped in female, with white bands in male. Proboscis black
 Thorax dark reddish-brown, with white spots on sides.
 Abdomen black, unbanded.
 Length, 2½ mm.

Appendix III.

Directions for the Destruction of the Larvæ of Mosquitoes, embodied in a General Order to officers in charge of Police Stations, 22nd June, 1901.

The one great principle to act on is to prevent or abolish all stagnant water.

Careful search should be systematically made in the neighbourhood of all dwellings for any vessels that might contain stagnant water from rain or any other source; and arrangements should be made to keep them empty, or to have them emptied, or the water changed, once a week.

If running streams or ravines be anywhere near a station, efforts should be made to confine the water to a central channel. Side pools should be filled up; rock hollows should be smoothed out by cement or concrete, or a channel should be made from them by means of hammer and chisel; and a ready exit, or drainage under ground, should take the place of all ooziings of water from the ground surface.

Where this guiding principle cannot be applied, or until it can be applied, still or stagnant water surfaces should be systematically inspected for the presence of larvæ of mosquitoes, and measures adopted to destroy them. This is most conveniently done in this locality by sprinkling the water surface with kerosene oil. The oil spreads in a very thin layer over the surface, and prevents the larvæ from rising to breathe the air, which results in their speedy death. About one tea-spoonful of oil to each square yard of water surface is sufficient, and, if there is little movement of the water, once a week is often enough.

As the colour of the larva assimilates itself to the colour of the water it inhabits, the larvæ cannot usually be easily seen in the water pool itself. It is necessary to dip up the water with a rapid dip of a large spoon or a saucer.