

NEWS AND NOTES

One of the most interesting, and best attended, meetings of the National Malaria Society, was held December 2-4, 1947, in Atlanta, Ga. The meeting was held conjointly with the 43rd annual meeting of the American Society of Tropical Medicine and the 14th annual meeting of the American Academy of Tropical Medicine. This was the first time these organizations were unable to meet with the Southern Medical Association, because of lack of accommodations.

Dr. E. Harold Hinman, Wilson Dam, TVA, was elected President of the organization for 1948.

Several papers delivered at the meeting were of special interest to mosquito control workers. Among such papers were: "New plans for Vector Control in California," by Arve H. Dahl, "Effects of Routine DDT Mosquito Larviciding on Wildlife," by Clarence M. Tarzwell, "Some Factors Influencing the Residual Effectiveness of DDT and Chlordane in *Anopheles* Mosquito Control," by K. D. Quarterman, "The Influence of the Moon on Lighttrap Collections of Mosquitoes in Puerto Rico," by Harry D. Pratt, "Factors Influencing Crepuscular Activity of *Anopheles albimanus* in Panama," by Harold Trapido, "Flight Range Studies on *Culex tarsalis* Coq. in California," by W. C. Reeves, B. Brookman, and W. McD. Hammon, "What's Happening to Malaria in the USA," by J. M. Andrews, and "Blueprint for Malaria Eradication in the USA," by J. M. Andrews, and W. E. Gilbertson.

The first year of the U. S. Public Health Service five year malaria control plan is over, and reports indicate that there is the same feeling of optimism now as when it was formulated.

The Presidential Address by Dr. George K. Strode, was read by Dr. George Shattuck. This paper discussed the influence and effects of climate on the health of man. A consolidation of the three Associations was also discussed by Dr. Strode in this paper. A committee representing each of the Associations was appointed to study such a consolidation.

The Theobald Smith Gold Medal of the George Washington University was presented to Dr. Clay G. Huff, Naval Medical Research Institute, Bethesda, Md., whose address was "Exoerythrocytic Stages of Malaria Parasites."

The many gracious courtesies extended by the personnel of the Communicable Diseases Center of Atlanta were greatly appreciated by those in attendance. A dancing party at the Center was enjoyed by a large number of visitors.

H. H. STAGE

NO FLIES ON IDAHO—BOAST OF MAGAZINE DIGEST DDT ARTICLE. A combined digest of two publications concerning the recent anti-housefly campaign in the State of Idaho is to be found

in the August, 1947, issue of Magazine Digest, which should be read by those districts contemplating the extension of their mosquito control measures to include houseflies.

MOSQUITO BUZZ

A REVIEW OF MOSQUITO CONTROL IN CALIFORNIA. Beginning with the January 15, 1948 issue of *Mosquito Buzz*, a chronological review of the growth of mosquito control in California will be featured. Beginning with the Marin County MAD, the first Mosquito Abatement District to be organized in California, and proceeding in chronological order, the present 39 mosquito and pest abatement districts, none of which has ever been dissolved, and prospective new districts as organized, will be featured, one district in each issue. The project will, of necessity, run for the better part of four years. MOSQUITO BUZZ

FIRST QUARTER SUBVENTION SUMMARY PROVES INTERESTING. Based on operation reports of twelve of the seventeen mosquito control agencies which have thus far submitted complete information for the first quarter of the current fiscal year, there remains no question to the frequently stated conclusion that mosquito control in California is "big business."

Buck Buchanan has come up with the following figures for the first quarter: Larviciding—30 tons of DDT and 3,264 gallons of oil were consumed in treating 325 square miles of water surface, 2,116 cesspools, 16,671 catch basins, 2 miles of street gutters and 8,571 miscellaneous containers. 32,242 man hours and 484 plane hours were needed to accomplish this work. Adulciding—11 tons of DDT were used in addition, for approximately 6½ square miles of building surface and about 700 square miles of the great outdoors, both requiring the expenditure of 11,000 man hours.

The twelve districts supplying the figures cover a collective area of 6,454 square miles and their vehicles covered a total of a little over one-third of a million miles in completing these and other services for their constituents.

Statistically speaking, the average district of the twelve contains an area of about 538 square miles, has a staff of about 15 persons working a 44-hour week. Two-thirds of the total man hours are expended on rural operations, one-seventh on urban operations and one-fifth on unclassified work.

If complete figures on all thirty-nine MADs, plus the several Health Departments performing mosquito control operations, were obtainable, there would be an even more impressive summary for "Buck" to present with or without statistics.

MOSQUITO BUZZ

HOW BIG ARE YOUR MOSQUITOES? ALAMEDA CO. MAD KNOWS THEIRS. Ted Aarons, Entomologist of the Alameda Co. MAD, has done a bit of research into the displacement, expressed in milligrams, of the *Culex tarsalis* mosquitoes collected in that district. The huskiest female among those weighed on a highly sensitive balance, tipped the beam at 1.5 m.g., with the lightest weighing 0.1 less. By calculation, it follows that 19,551.4 mosquitoes are required to make one ounce. To complete the study, a proboscis was severed from the body and weighed; it taxed the scale in showing 0.1 m.g. Most everyone agrees that so little possesses a lot of authority. MOSQUITO BUZZ

MOSQUITO CONTROL EXPANSION CONTINUING AT A BRISK CLIP. To the approximately 15,000 square miles of area now under organized mosquito control, it is expected that approximately 2,000 additional square miles will be added by February 1, 1948, enabling this area to be included on the tax rolls for the fiscal year beginning July 1, 1948. Territory in Tehama County, Colusa County, Sutter County, Contra Costa County, Stanislaus County, Fresno County, Tulare County and possibly Los Angeles County represent the likely increase. During the year 1948, approximately 2,000 additional square miles of area are expected also to wage war on mosquitoes from territory in Glenn, Butte, Contra Costa, San Joaquin, Fresno and Riverside Counties. Looking forward to 1952, there could well be an additional 3,000 square miles of area added from various regions in California. This would then find the State with approximately 22,000 square miles of area under organized mosquito control. By 1952, the effects of the C.V.A. with its increased irrigation should be felt, making another estimate of future mosquito control area likely. MOSQUITO BUZZ

NEW JERSEY REPORTS ON THE USE OF AIRCRAFT IN MOSQUITO CONTROL WORK. Thomas D. Mulhern, Administrative Assistant, New Jersey Agricultural Experiment Station, sent a report to the Asheville conference entitled: "A large scale emergency application of DDT by airplane to destroy immediately an intense infestation of mosquitoes, and to subsequently keep mosquitoes under control by the residual effect of the DDT on foliage and other exposed surfaces in the treated area." Extracts from the article follow:

"The region about Carneys Point, Deepwater Village, Penns Grove, etc., had according to local reports become infested with mosquitoes in April and early May, 1945, and great annoyance had resulted throughout the early part of the summer, increasing as mid-summer approached. During June and July my investigations showed the principal breeding places to be at Carneys Point; that both salt marsh and fresh water species were breeding prolifically;

that there were some anopheles mosquitoes breeding here; that the salt marsh species were biting freely both at night and in the daytime, while the fresh water species (principally the common house mosquito) were active principally at night. A wide variety of breeding places were found on the tract of approximately 1000 acres occupied by a powder plant, including two fresh water streams bordered by swamp areas of comparatively clean water. The mosquito infestation was very great indeed, as determined by inspection and confirmed by the operation of mechanical mosquito traps.

"... two planes fitted with spinner disc spray units being used. The area sprayed was 938 acres, and included wooded areas, brush lands, grass land, cleared areas occupied by industrial buildings, marsh land, ponds and ditches, etc. More than 100 acres of land was water covered. The material was applied at the rate of 5 gallons per acre, the concentration being adjusted to give dosages in 3 different sections as follows:

Section 1—(100 acres) 2 lb. DDT/acre, in fuel oil No. 2.

Section 2—1.6 lb. DDT/acre, in emulsion.

Section 3—1.2 lb. DDT/acre, in emulsion.

"The spraying resulted in virtually complete elimination of larval and adult mosquitoes from the area treated, except for those in very well protected places. On all inspections made during the month following the spray treatment, adult mosquitoes were numerous outside the treated area, particularly along its southern border, but only an occasional live adult mosquito could be found by intensive day inspection in the treated area, indicating that the mosquitoes which were doubtless infiltrating from the surrounding area were being controlled by the residue of DDT."

Mr. Mulhern reported that a total of 938 acres were sprayed, with a flying time of 9 hours, 10 minutes; and that 4,500 gallons of spray emulsion were dispersed and 500 gallons of spray oil solution. He also stated that the foaming of the emulsion when it is loaded into the plane tanks can be prevented by introducing the emulsion into the bottom of the tanks.

"The costs of this operation, for airplane service and materials only, amounted to about \$3500.00. The costs of this treatment were high, but justified in this instance by the emergency nature of the treatment." H.L.T.

PORTLAND AND MULTNOMAH COUNTY (OREGON) MAD REPORTS USE OF AIRCRAFT IN MOSQUITO CONTROL WORK. Mrs. Dorothy McCullough Lee, Commissioner of Public Utilities, Portland, Oregon, sent to the Asheville conference a detailed report on mosquito control in her territory. Extracts from this article follow:

"The City of Portland, Oregon, is at the confluence of the Willamette and the Columbia Rivers. Along these rivers, and particularly at

the juncture point, there is considerable lowland densely covered with brush and trees. In the spring, these rivers frequently rise 14 feet above their normal levels, and, as a result, approximately 35,000 acres in Multnomah County are flooded, making an ideal breeding ground for *Aedes vexans* and *Aedes lateralis* (= *aldrichi*) mosquitoes.

"During January of 1947, two Stearman PT-17 airplanes were purchased by our city. These planes are equipped with 220 H.P. Continental engines and are the type used by the Army and Navy as trainer planes. One of the airplanes is equipped with spray booms and wind-driven pump apparatus, and the other with an exhaust aerosol generator. The aerosol equipment also makes use of wind-driven pump equipment. A P-40 auxiliary gas tank was suspended between the landing gear of the aerosol airplane as an insecticide tank. This is a heavy aluminum tank holding 55 gallons and it makes an excellent installation. The tank is easily filled and cleaned and no leakage and spillage on the fabric of the airplane results, as is often encountered with the tank in cockpit.

"Walkie talkie radios, purchased from W.A.A., were used as a means of communication between aircraft and ground scout crews. The very dense cover in the breeding areas made the use of smoke signals, flags and other visible communication practically useless. The insecticide dispersed by both aircraft was identical, consisting of xylene, japonica oil, diesel oil and DDT. The rate of dispersal was 2 quarts per acre, 110 foot swaths at 80 mph.

"We find the airplane method of mosquito control to be very effective in our brushy flood-water breeding grounds. The cost of control from aircraft has proven to be less than the other methods used previously. The cost in this area, in spite of the fact that it was the initial year and therefore more costly than it will be in the future, was approximately ten per cent less than in previous years. Also, the results obtained by aircraft are far superior, regardless of expenditure.

"In conclusion I wish to state that the control of mosquitoes by aircraft has shown itself to be highly successful in this area. The people of Portland, as well as the property owners engaged in farming and similar enterprises in the rural sections of Multnomah County, have shown themselves to be highly pleased with the results of this year's work." H.L.I.

DELAWARE COUNTY (Pa.) MOSQUITO EXTERMINATION COMMISSION REPORTS MOSQUITO CONTROL BY AIRCRAFT. Russell W. Gies, Scientific Director and Sanitary Engineer, Mosquito Extermination Commission of Delaware County, Media, Pa., has submitted the following information: "The Borough of Phillipsburg, Pa., had an application, at the rate of one gallon of 5 per cent DDT in

oil, sprayed over 2,000 acres of the borough and surrounding areas in the middle of July, and it cost two thousand dollars. I am advised that the results were extremely satisfactory in the prevention of mosquito annoyance, there being practically no mosquitoes for approximately a month after the spraying; and for the balance of the mosquito season, mosquitoes were much less than normal, apparently due to the effect of the DDT. The principal type of mosquito that reappeared was *Mansonia perturbans* which was not apparently numerous in the early part of the season before the spraying."

GENERAL ELECTRIC NUCLEONICS PROJECT (RICHLAND, WASHINGTON) REPORTS MOSQUITO CONTROL BY AIRCRAFT. L. G. Koch, Sanitarian, Public Health & Welfare Section, Medical Department, General Electric Nucleonics Project, has reported on control operations for *Aedes dorsalis*, *A. lateralis*, and *A. vexans*. We quote from his letter as follows: "... those areas inaccessible to ground equipment were sprayed daily for 2 or 3 days by the aircraft, a treatment which was satisfactory but costly in aircraft time. In such instances, we later resorted to laying down a DDT residual barrier around the area and obtained results which were just as satisfactory; i.e. there being little significant difference in the eventual number of adults. An L-4 Piper Cub provided with a 35-gallon aluminum fuel tank is mounted in the position of the rear seat. A breaker bar is attached below the wing, fitted with six jets on each side, and serves as the dispensing means. A centrifugal propeller driven pump is attached to the feed line leading from the tank to the breaker bar. The pump forces the solution to the bar at about 30-35 pounds per square inch. As an added feature, a 24-30 inch section of radiator hose was fitted to the bottom of the fuel tank and attached to the fuselage. This served as an emergency 'dump' of the oil in case of trouble necessitating the pilot's lessening the load immediately. This also serves as a means of spraying long irrigation drainage ditches which were bordered with heavy vegetation. Under more or less ideal conditions, flights were made at an altitude of 30-50 feet at a flight speed of 60 mph, the swath width varying from 40-70 feet. A 5-7 per cent DDT solution was used almost exclusively and the areas treated at the rate of 2-4 quarts per acre. To accomplish adequate control this had to be repeated every 6-8 days.

"Our pilot estimated that for every pay load of 35-40 gallons sprayed, the time involved was one hour. The one hour included loading the aduicticide, servicing the plane, including motor repairs, etc., and time in flight. We were fortunate in the fact that the air strip was located in the center of operations, a factor which reduced the flight time to a minimum."

TULARE (CAL.) MAD REPORTS ON MOSQUITO CONTROL BY AIRCRAFT. Rolland L. Henderson, Manager, Tulare Mosquito Abatement District, Tulare, California, has written about mosquito control by airplane as follows: "We have used an airplane this season for mosquito control. It's the first season we have used one and we are very enthused over our findings. We are using an N3N airplane equipped with a rather new and different type of spray equipment. It has a revolving 8" wire brush on the center trailing edge of each lower wing, revolved by a small propeller on a shaft at the leading edge of the wing. The liquid flows by gravity through a 1½" pipe, through the wing. A quick acting valve at the back of the brush controls the flow.

"We fly about 30 feet from the ground obtaining a 75 foot swath width, and obtaining, conservatively, a 95 per cent kill of larvae and adults. We use 24 per cent emulsible DDT and dilute that with water to 5 per cent DDT, which is the only type of solution we have used this year. We use 2 quarts per acre or 2/10 pounds per acre, which is 2 mg. per square foot of every acre. The cost of spraying is about 57½ cents per acre."

"MOSQUITOISM." CHAMPAGNE GIVES WAY TO DDT. Recently, Mrs. William F. Devlin, wife of the Mayor of Seattle, christened the good ship Culicide. The boat had been acquired by the City of Seattle for use in spraying mosquito breeding. Mrs. Devlin did the honors with a bottle of DDT.

From THE "SKEETER" (Oct. 1947)

MINUTES OF THE FIRST POST-LIBERATION MEETING OF THE PHILIPPINE SOCIETY OF PARASITOLOGY HELD ON SATURDAY, SEPTEMBER 27, 1947, IN THE MALARIA BUILDING OF THE U. S. PUBLIC HEALTH SERVICE, 25TH STREET, PORT AREA, MANILA

1. The meeting was called to order at 3:30 p.m. by President M. Tubangui.

Present:

1. Dr. Marcos Tubangui
2. Dr. Hilario Lara
3. Dr. Walfredo de Leon
4. Dr. Zacarias de Jesus
5. Dr. Mariano Basaca
6. Dr. Lope M. Yutuc
7. Dr. Eusebio Y. Garcia
8. Dr. Antonio Ejercito
9. Dr. Deogracias J. Cabrera
10. Dr. Trinidad P. Pesigan
11. Dr. Virgilio S. Rigor
12. Dr. Felicidad Albis
13. Dr. Francisco Gonzales
14. Dr. Antonio F. Acosta
15. Mr. Fraterno Abad Santos
16. Mr. C. M. Urbino
17. Dr. Francisco J. Dy

2. Dr. Tubangui opened the discussion by remarking that this was the first meeting of the Society after 6 years, and that all the records and papers of the Society were lost during the war. The passing of Dr. Candido M. Africa, who used to be Secretary-Treasurer of the Society, was deeply mourned. Dr. Tubangui also remarked that the Philippine Society of Parasitology is one of the few organizations which do not consider it necessary to have a constitution and by-laws; the members being bound together only by their professional interest and professional ethics. He announced that the Society is listed in the fourth (1942) edition of the "Handbook of Scientific and Technical Societies of the United States and Canada" with the following notation:

"1036. Philippine Society of Parasitology. Institute of Hygiene, University of the Philippines, Manila, P. I. President: Marcos Tubangui, Bureau of Science, Manila, P. I. Secretary: Candido M. Africa.

History: Founded August 20, 1930.

Object: To encourage interest and research in parasitology in the Philippines; and to acquaint members of the Society by means of informal papers and discussion, with activities of the local workers in parasitology.

Membership: Active members, resident or visiting workers in parasitology; Honorary, those nominated by the Executive Committee from parasitologists in the world at large, limited and conferred only upon exceptional qualifications and prominence in the field of parasitology. Annual dues one peso, collected only when indicated by financial report. Total membership 20.

Meetings: Three or four meetings a year, at the Institute of Hygiene.

Research funds, medals, etc.: Members may apply for grants-in-aid from the National Research Council of the Philippines."

Dr. Tubangui further stated that current information concerning the Society is being requested by the National Research Council of the United States.

3. Having thus briefed the members, Dr. Tubangui opened the table for nomination of new officers.

4. Dr. Lara moved to unanimously elect Dr. Tubangui and Dr. Dy as president and secretary-treasurer, respectively, of the Society. This was carried.

5. The following were unanimously elected members of the Executive Committee:

Dr. Lope M. Yutuc, Dr. Eusebio Y. Garcia, Dr. Antonio Ejercito.

6. The President opened a round-table discussion on current parasitological problems. Topics taken up:

a. *Malaria.*

(1) Need for further studies to re-evaluate known antimalarials available in the P. I.

* (2) Need for studies to determine the definite relapse pattern of Philippine strain or strains of *vivax*, *fulciparum* and *malariae malariae*.

* (3). Possible presence in the P. I. of vector or vectors of malaria other than *A. minimus flavirostris*.

(4) Differentiation between the primary and secondary attacks of malaria during the first 7 days by microscopic examination of the blood smear. Dr. Garcia claimed that in primary infections, gametocytes are never found in the blood smear during the first 7 days, and that their presence indicates a relapse. This provoked a lengthy discussion.

* (5) Dissection of anopheline mosquitoes for sporozoites and oöcysts. Sporozoites found in *A. maculatus* and *A. Mangyanus*.

* (6) Breeding of *A. minimus flavirostris* above 3,000 ft. and in brackish water with a salinity of 1:1,280 total chlorides.

b. *Schistosomiasis*

(1) Provinces in the P. I. where the disease is prevalent.

(2) Distribution of the snail intermediate host in P. I.

(3) Problems presented by livestock in the spread of the disease.

(4) Value of "liver index" and "average enlarged liver" in determining the incidence and intensity of the disease in a community.

(5) Bionomics of the snail intermediate host.

* Am working on these problems now. We are also examining blood for micro-filariae. *W. Bancrofti* is supposed to be the only species here. But there is strong suspicion *Malayi* is also in the P. I.

PAGINTO

(6) Control measures.

c. *Filariasis*.

(1) Are there many vectors of this disease in the P. I.?

d. *Entomology*.

(1) Need for systematic survey of Philippine insects and arachnids in connection with entomological problems related to human diseases, like Equine encephalomyelitis, rickettsial fevers, etc.

7. One peso was collected from each of those present in the meeting.

8. The meeting adjourned at 6:15 p.m.

FRANCISCO J. DY

Secretary-Treasurer

Approved:

M. TUBANGUI

President

THE FIRST INTER-AMERICAN SANITARY ENGINEERING CONGRESS WILL MEET IN SANTIAGO, CHILE ON APRIL 8-14, 1948, AT THE UNIVERSITY OF CHILE. A balanced program has been developed, pertinent to the work of the Sanitary Engineer, with special emphasis on water supply problems, sanitation, and insect control programs.

Those planning to attend the Congress should contact the Secretary for hotel reservations, and should also notify him of date of arrival, plane flight, train numbers, etc. Manufacturers exhibiting at the Congress are requested to send their equipment and other materials directly to the Secretary, whose address is as follows:

Ing. Ruperto Casanueva del Canto

Secretario del Primer Congreso Interamericano de Obras de Salubridad

Tenderini 127

Santiago, Chile