SAN FRANCISCO SECTION OF THE AMERICAN MATHEMATICAL SOCIETY.

THE eighth regular meeting of the San Francisco Section of the American Mathematical Society was held at the University of California on September 30, 1905. During the morning session the following officers were elected for the ensuing year:

Chairman—R. E. Allardice.
Secretary—G. A. Miller.
Program Committee—E. J. Wilczynski, D. N. Lehmer and G. A. Miller.

Seventeen members of the society were in attendance; in addition to these there were present a number of high school teachers of mathematics who are not members of the society. The following papers were read and discussed during the two sessions of the section.

PROFESSOR C. A. NOBLE: 'Note on Loxodromes.'

DR. W. A. MANNING: 'Groups in which a large number of operators may correspond to their inverses.'

PROFESSOR M. W. HASKELL: 'A new canonical form of the binary sextic.'

PROFESSOR A. O. LEUSCHNER: 'On a new method of determining orbits.'

PROFESSOR ARTHUR RANUM: 'The representation of linear fractional congruence groups with a composite modulus as permutation groups.'

PROFESSOR E. J. WILCZYNSKI: 'On a system of partial differential equations in involution.'

PROFESSOR G. A. MILLER: 'The groups which contain only three operators which are squares.'

PROFESSOR R. E. MORITZ: 'On logarithmic involution, the commutative arithmetic process of the third order.'

PROFESSOR L. E. DICKSON: 'The abstract group simply isomorphic with the general linear group in an arbitrary field.'

PROFESSOR L. E. DICKSON: 'The abstract group simply isomorphic with the symmetric group.'

PROFESSOR M. W. HASKELL: 'On a class of covariants which give rise to birational transformations.'

The next meeting of the section will be held at Stanford University on February 24, 1906.

G. A. MILLER,
Secretary of the Section.

DISCUSSION AND CORRESPONDENCE.

STEGOMYIA AND YELLOW FEVER—A CONTRAST.

THE magnificent work done in New Orleans this summer and autumn in fighting the yellow fever outbreak on the sole basis of the transfer of the disease by *Stegomyia fasciata,* and which has resulted in the practical extirpation of the epidemic long before the first frost, has convinced the most stubborn among the citizens of New Orleans and many other cities and towns throughout the south of the fact that only in this way can an epidemic successfully be handled. The acceptance of what has been termed 'the mosquito theory' is now almost universal, and this brings us to the contrast.

In the *New Orleans States* of May 2, 1902, appeared an article with the following scare headlines: 'Taxpayers to Protest Against Passage of Anti-mosquito Ordinance. Has been Resurrected. A Meeting To-night. Property Holder Discusses Taxation without Benefit.'

In the body of the article the following statements are made:

An effort will be made to resurrect the anti-mosquito ordinance at the next meeting of the committee on police and public buildings to which are entrusted for consideration all questions pertaining to public health. The measure was introduced last November by Mr. Cucullu at the request of Dr. Q. Kohnke, president of the city board of health. The measure was not popular, as the taxpayers contended that its enactment was but another form of enforced taxation. * * * Because of its evident unpopularity, the promoters of the ordinance requested that it be not pressed, and for that reason it has remained untouched before the committee ever since.

In the meantime the endorsement of medical men and organizations has been sought with more or less success, so that now Dr. Kohnke feels that the chances are more favorable to call the measure up. * * *

But there are many taxpayers who are determined to resist the passage of the ordinance, and should it be defended by the committee on police and public buildings at its meeting next Monday evening * * * there will be taxpayers present who will strive to prove to Dr. Kohnke that the arguments in favor of this new venture are not so strong and convincing as he believes.

A special meeting of this taxpayers' protective association has been called to be held this evening at 7:30 o'clock. * * *

'The passage of the proposed ordinance,' said a prominent taxpayer this forenoon, 'would be nothing short of an outrage.'

I wonder what this 'prominent taxpayer' thinks about the ordinance now. It is a sad thing to suggest, but possibly he himself or some member of his family has died as a result of the senseless opposition, in which he took part, to a reasonable and public-spirited health measure.

In an evening paper of March 28, 1902, there appeared a note to the effect that a correspondent of the Associated Press had a talk with the State Health Officer of Texas, regarding the mosquito theory. He was reported as of the opinion that 'The theory won't hold water,' and stated that he would not accept it. He stated that he had been familiar with yellow fever from childhood and 'knew enough to keep rigid quarantine and disinfecting rules in effect.' A little more than a year later, however, he had a new lesson in the Texas outbreak of yellow fever in the late summer and autumn of 1903, and he too changed his mind in regard to mosquitoes.

L. O. HOWARD.

THE POSSIBILITY OF ABSORPTION BY HUMAN BEINGS OF NITROGEN FROM THE ATMOSPHERE.

ANY one reading this article would conclude that it has been proved that plants can absorb free nitrogen from the atmosphere without the aid of bacteria, and that Dr. Wohltmann is a believer in this. The quotation which the writer gives does not bear out this interpretation of Dr. Wohltmann's work:

> The association of the plant with the bacteria is not a necessity but an expedient, and whenever there is a rich supply of nitrogenous elements in the soil, they (the plants) dispense with the bacteria and *with the free nitrogen*, which the latter make available, by directly secreting it from the chemical combination of soil or air in which it is held suspended.

The italics are mine, but the translation is by Mr. Gibson. Dr. Wohltmann is far from saying that plants absorb free nitrogen in the absence of bacteria; but distinctly says, in the above quotation, that in the absence of the bacteria they dispense with the free nitrogen and take the nitrogen necessary for their growth in combination from the soil.

This is no new discovery, for Hellriegel, in 1886 and later, showed by decisive experiments that when the bacteria are absent, Leguminosæ, like other plants, can only take their nitrogen in compounds, and their growth, within limits, is a function of the combined nitrogen presented. In the presence of bacteria Leguminosæ can utilize the free nitrogen of the air, and build it up into organic compounds.

Before speculating on the possibility of the absorption of free nitrogen by human beings, it is well to remember that there is no evidence that higher plants can assimilate nitrogen of the air without aid of bacteria.

G. S. FRAPS.

A TREE'S LIMB WITHOUT BARK.

TO THE EDITOR OF SCIENCE: In the summer of 1902 a large ash tree, some two feet in diameter, on the university campus was struck by lightning. The current, after knocking off a few branches, passed down on both sides of the main trunk leaving here merely two small furrows in the bark. From one limb, some six inches in diameter and perhaps ten feet from the ground, the bark all around was completely stripped for a distance of about five feet. To the surprise of some of us the leaves on this branch did not wither, nor fall to the ground till the leaves of the rest of the tree fell in the autumn. The next spring the leaves put out on this branch as on the rest of the tree; so again in 1904 and again the present year. In other words, the vegetation of this branch, wholly girdled for a space of several feet, differs from that of the rest of the tree only in being slightly less vigorous. The wood of the girdled portion looks much like a seasoned log of ash wood. The tree itself is rather less vigorous than the neighboring ashes, and will probably survive but a few years longer. Is it common for a limb,