has hitherto been reached. In addition, plans
for still more effective control of the mosqui-
to pest, both from the health and pest angles,
within naval bases, forts, arsenals and defense
industries, as well as their environs, should
be prepared and made ready for use whenever ad-
ditional monies become available for carrying
them out. In areas within this state where
camps, forts, and defense industries are locat-
ed in territory not served by active mosquito
commissions plans should be set up as rapidly
as possible for taking care of the health and
pest situation within and throughout the envir-
ons of such camps, forts, and defense industries.

Some Federal monies have already been set
aside for work of this kind throughout the
United States and it is not unlikely that more
will be provided if needed.

Mosquito control workers should, there-
fore, be on their toes ready and willing to go
into the performance of duty of this character.

DEVELOPMENTS IN MOSQUITO CONTROL
Hudson County Dredging Operations
by L. DeWitt McCarter

The Hudson County Mosquito Extermination
Commission, in the spring of 1940 placed into
operation in Saw Mill Creek a hydraulic dredge.
The dredge is a six (6) inch suction and six
(6) inch discharge machine completely equipped
with deck house, gasoline powered ladder, cut-
ter, swinging rig, and spuds, and discharges
thru an eight (8) inch pontoon and shore pipe
line. The hull is welded steel construction,
thirty-one (31) feet long, fourteen (14) feet
wide and three (3) feet deep, made up in two
(2) longitudinal sections and bolted togeth-
er. The cutter ladder is designed for
an economic depth of ten (10) feet at an angle of forty-five (45) degrees.

The main pump is a Morris six (6) inch Type H and the main engine is a Buda Type J-H-6. The pump has been tested for a capacity of one thousand, two hundred and fifty (1,250) gallons per minute of mixture of silt, sand, gravel and fresh water, with solids ten (10) percent by volume, this capacity being delivered against a total head of one hundred and twenty-five (125) feet.

The dredge is equipped with five hundred and ten (510) feet of eight (8) inch steel pontoon pipe and one thousand three hundred and twenty (1,320) feet of eight (8) inch steel shore pipe including sleeves and couplings. The equipment is unique in its entirety and the entirety and the entire design makes for ready dismantling and portability. Dredging was preferred over a drag-line because of the width of the creek and soft banks of the channels to be cleaned. Because of the need for crossing railroads, highways and other obstructions, the dredge had to be dismantled and transportable. Many dredge machines were considered, and it was finally decided that a machine owned by the City of Newark and which had been used in the reservoir at Charlottesburg, New Jersey, was most practical for our purpose. This is the machine which has just been described and was acquired by Hudson County from the City of Newark at a very attractive figure.

The program undertaken and commenced in the early spring of 1940 was the restoring of Saw Mill Creek from the Public Service Private Road to the Hackensack River. Originally this water course was navigable and was approximately 80 feet in width and of sufficient depth to safely accommodate barges and small craft. Thru disuse and neglect as well as changing physical conditions the creek became obstructed and over-
grown. In many parts it was completely over
grown and it was not possible to discern any
water course whatsoever. On the commencement
of the work of restoration it was necessary to
excavate a pit in the creek bed of sufficient
size and depth to launch and set up the dredge.
This was done by drag-line and subsequently the
dredge was launched and assembled. When the
actual operation commenced great difficulty
was encountered in handling root clumps and
masses of water-logged cat-tail roots. It was
found necessary in order to prevent frequent
clogging of the pump that a rather unusual op-
eration of the dredge be followed. The dredge
operator raised the ladder so that it was di-
rectly beneath the surface of the water and
then swept from side to side thus forcing the
root clumps to either bank where shore men
equipped with potato hooks were able to drag
the clumps up on the bank and clear of the cut-
er head. Thereafter, the dredge operator would
gradually lower the ladder and with the cutter
head in operation cut and suck the silt to the
desired depth. Thereafter the dredge followed
and as it progressed restored the creek to an
average width of fifty (50) feet and an aver-
depth of six (6) feet between the points indi-
cated. It has been found that in operation the
dredge equipment functions with greater speed
than another type of equipment which might be
used, it is also found that our operating ex-
penses were considerably less than would have
been incurred in the use of drag-line or simila
machinery. The cost to this Commission of the
complete operation was further reduced due to
the fact that we were able to operate our dredge
by W. P. A. man power. The complete job is
most satisfactory in appearance and in function.
The drainage effected by the improvement is far
superior than that which heretofore occurred
and permits a much speedier discharge of water
accumulations in the Saw Mill Creek area.
After the completion of the foregoing job the dredge was dismantled and trucked to Penhorn Creek in Secaucus at a point adjacent to Secaucus Road and the Pennsylvania Railroad right-of-way. As in the preceding instance it was necessary to excavate a pit in which to set up the machine. The operation in Penhorn Creek which is now under way extends from the intersection of Penhorn Creek and the Pennsylvania right-of-way to State Highway, Route #3.

A somewhat different condition is encountered in this creek. In the vicinity of the piggeries it is found that a solid layer of pig manure of approximately four (4) feet in thickness above water level occurs. In other sections adjacent to the piggeries manure, refuse and a miscellaneous of waste material occurs to a height of approximately twenty (20) feet above water level. Penhorn Creek was originally a navigable stream and at the point now being treated was of an average width of eighty (80) feet and of sufficient depth to float medium size craft.

Our dredge is now proceeding through this section and restoring the creek to an average width of fifty (50) feet and an average depth of six (6) feet. However, it must be observed that when ground has thawed it may be necessary to cut the creek to a greater width in order that the slide of soft material and manure which is present will not block the channel recreated. At the present time approximately 800 lineal feet has been cut and the operation will be continued until the section is completed. Thereafter it will again be necessary to dismantle and move the equipment to another section of Penhorn Creek where a like operation will be conducted. When completed Penhorn Creek will have been restored for its entire length affording increased efficiency in the drainage of the Secaucus meadows.