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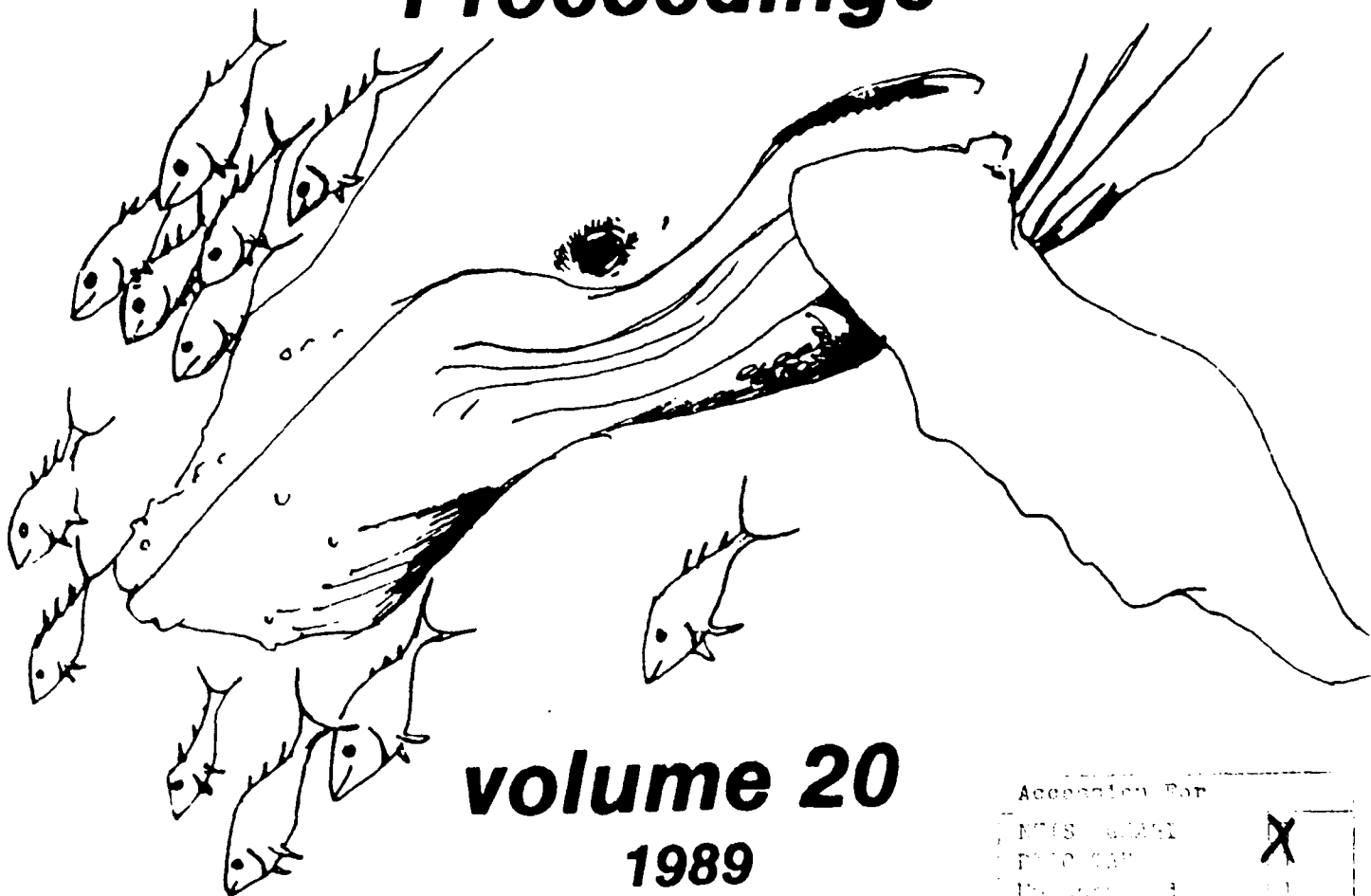
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13. ABSTRACT (Maximum 200 words) <p>The overland transportation of captive dolphins is at times a necessary part of their normal management and care. While any deviation from the normal daily routine of a captive dolphin has the potential of being stressful, transportation may be one of the most stressful events a captive dolphin must endure. While opinions differ on how stressful transportation can be, current beliefs are based primarily on subjective observations. To date no techniques are available for objective evaluation of the influence stress has on immune function in dolphins.</p> <p>The purpose of this study was to determine if the lymphocyte transformation assay (LTA) could detect changes in immune function in dolphins and to evaluate the degree and duration of immunosuppression associated with a mild well defined stressful event.</p> <p>Two adult healthy captive dolphins were used in this study. Prior to and for three weeks following a 12 hour simulated transportation period (out of water) peripheral blood lymphocytes were periodically isolated, cryopreserved, and LTA performed using techniques previously developed for this purpose. Blood and serum samples were also collected and evaluated for hematologic and biochemical changes.</p> <p>No behavior, hematologic or biochemical abnormalities were noted following the simulated transportation period. However, a decrease in lymphocyte transformation response was detected. The most severe depression of lymphocyte activity occurred approximately 5 days post transport and returning to normal levels by day 11.</p> <p>While additional studies are needed to fully characterize the effects of stress on the dolphin immune system, the results provide for the first time a method of determining the changes in immune function in individual dolphins. Our findings do not associate the depression of lymphocyte activity that was observed with a decrease resistance to disease. Future studies will be necessary to relate the degree of LTA measured immunosuppression with decreases in disease resistant. Such techniques and determinations should play a central role in the development of improved dolphin management systems that both minimize stress and thus optimize disease resistance. <i>Results (S10) 7</i></p> <p>Published in <i>IAAAM Proceedings</i>, Vol. 20, 1989.</p>				
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ALTERATION IN CELLULAR IMMUNE FUNCTION ASSOCIATED
WITH THE SIMULATED TRANSPORTATION OF DOLPHINS

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Abstract

The overland transportation of captive dolphins is at times a necessary part their normal management and care. While any deviation from the normal daily routine of a captive dolphin has the potential of being stressful, transportation maybe one of the most stressful events a captive dolphin must endure. While opinions differ on how stressful transportation can be, current beliefs are based primarily on subjective observations. To date no techniques are available for objective evaluation of the influence stress has on immune function in dolphins.

The purpose of this study was to determine if the lymphocyte transformation assay (LTA) could detect changes in immune function in dolphins and to evaluate the degree and duration of immunosuppression associated with a mild well defined stressful event.

Two adult health captive dolphins were used in this study. Prior to and for three weeks following a 12 hour simulated transportation period (out of water) peripheral blood lymphocytes were periodically isolated, cryopreserved, and LTA performed using techniques previously developed for this purpose. Blood and serum samples were also collected and evaluated for hematologic and biochemical changes.

No behavior, hematologic or biochemical abnormalities were noted following the simulated transportation period. However, a decrease in lymphocyte transformation response was detected. The most sever depression of lymphocyte activity occurred approximately 5 days post transport and returning to normal levels by day 11.

While additional studies are needed to fully characterize the effects of stress on the dolphin immune system, the results provide for the first time a method of determining the changes in immune function in individual dolphins. Our finding do not associate the depression of lymphocyte activity that was observed with a decrease resistance to disease. Future studies will be necessary to related the degree of LTA measured immunosuppression with decreases in disease resistant. Such techniques and determinations should play a central role in the development of improved dolphin management systems that both minimize stress and thus optimize disease resistance.