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INDIANA ACADEMY OF SCIENCE

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Volumes 71-80

1961-1970

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by
GLORIA E. JACKSON
and
MARION T. JACKSON

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 BLOME, D. A.; BONEHAM,
 R. F.; CLEVELAND, J. H.;
 COFFMAN, D. M.; CROWE,
 D. R.; DILLON, L. I.; DINGA,
 C. F.; DINKEL, R. M.; DUNN,
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 KNOWLES, W. W.; LEWIS,
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- THOMPSON, I. B.; TURNER, A. K.; VISHER, S. S.; WAYNE, W. J.; WEBB, G. W.; WEBER, N. V.; WEST, T. R.; WHIPPO, P. D.; WIER, C. E.; WRIGHT, R. D.)
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