CONCLUSIONS

1. No correlation was found between species and phenotypic traits or between species and host insect, geographical location, and environmental source.
2. Parasporal body formation was present in all isolates of *P. popilliae* and *P. lentimorbus* rather than being restricted to *P. popilliae* as originally described. The presence or absence of a paraspore is not a useful characteristic for distinguishing between the two species.
3. The absence of vancomycin resistance in the Central and South American strains of *P. popilliae* indicates a unique geographic distribution of the resistance genes. Resistance to vancomycin is of no help in identifying isolates from these areas.
4. Growth on medium containing 2% sodium chloride may be of some use in identifying *P. popilliae* from Central and South America because the majority of the *P. popilliae* strains grew on medium supplemented with 2% sodium chloride and the majority of the *P. lentimorbus* strains did not grow on this same medium. However, this test is not completely reliable.
5. The presence of a gene resembling *cry18Aa1* in both *P. popilliae and P. lentimorbus* strains is further evidence that this is not a valid character on which to base species identification.
6. Sequencing data shows that the *cry* genes of two of the South American strains that were sequenced are similar to the published *cry18Aa1* gene and that the sequences are similar to each other.
7. An insert within the *cry* gene of one South American *P. popilliae* strain that was sequenced contains a duplicated region of significant similarity to a region of another gene, *orf1*, of the

same operon. The insert could provide a RBS for the South American *cry* gene that is different from the published *cry18Aa1* gene.

8. The *cry* gene was detected in the *P. lentimorbus* type strain, ATCC 14707, which does not produce the parasporal body. Sequencing data showed no similarity to the *cry18Aa1* published sequence or to any other published sequence. Differences in the gene sequences could explain the absence of a parasporal body in ATCC 14707.