Hadjimichael and Saylor Respond: Arenhovel fails to see trends in the data for deuteron photodisintegration because he merges several sets of experimental results without proper regard to their nonstatistical errors. In contrast, a broad survey of past experimental work involving careful scrutiny of published information and direct contacts with experimentalists who performed some of this work revealed to us that because of errors inherent in experiment procedures, certain data should be excluded from theoretical analysis. Of the twenty or so experiments on $^2\mathrm{H}(\gamma,p)n$, we found only about six[1-6] which conceivably can test the two-nucleon theory at the 5% level of uncertainty. Even points from Ref. 6 above 35 MeV must be excluded because the Born approximation employed in this case is subject to significant corrections when calculating the tip of the bremsstrahlung spectrum. We chose to exclude the total data set of Ref. 6, however, because the evaluation of the entire bremsstrahlung spectrum was done by means of an inappropriate angular integration[7]; a more appropriate integration[8] would have resulted in results consistent with those of Ref. 3. Similar criticisms are valid in the case of the data of Baglin *et al.*[9] The data of Galey[10] are judged to be unsuitable because of contamination due to $d(\gamma,n)$ reactions in the target. Galey failed to subtract out this background, estimated to be (10–40)%. The data of Skopic *et al.*[11] have larger than 5% uncertainties due to the employment of virtual-photon theory. The results of Bosman *et al.*[12] depend on the value of the backward n-p scattering cross section which is not known at the 5% level. Our justification for excluding data from Refs. 6 and 10 was accepted by the respective authors.

On the other hand, our investigations showed that the data included in our analysis were collected by experimental procedures that were designed to assure systematic errors smaller than statistical errors which themselves were of order 3%. Thus, excluding the data of Refs. 10 and 11 and the high-energy points from Ref. 6, for the reasons we have discussed, there is little doubt that the rest of the data form an experimental band showing a definite and meaningful trend. In fact, if proper allowances are made for nonstatistical errors, all existing data could be consistent with this experimental band. Our conclusions drawn on the basis of the observed trend[13] are outside the framework of conventional NN theory but they are further supported by data on $^2\mathrm{H}(e,e')$ and $^2\mathrm{H}(e,e'p)$ (Ref. 14) and also by work on $^2\mathrm{H}(p,2p)$ and p-p bremsstrahlung; they are also in line with ideas from elementary-particle physics on the size of nucleons due to their constituent nature.

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[1]C. A. Barnes *et al.*, Phys. Rev. 86, 359 (1952).
[2]J. Ahrens *et al.*, Phys. Lett. 52B, 49 (1974).
[3]L. Allen, Phys. Rev. 98, 705 (1955).
[4]E. A. Whelin *et al.*, Phys. Rev. 101, 377 (1956), and 95, 1362 (1954).
[5]A. Alexandrov *et al.*, Zh. Eksp. Teor. Fiz. 33, 614 (1975) [Sov. Phys. JETP 6, 472 (1958)].
[6]B. Weissman and H. L. Schultz, Nucl. Phys. A147, 129 (1971).
[7]L. I. Schiff, Phys. Rev. 83, 252 (1951).
[8]E. Hisdal, Phys. Rev. 105, 1821 (1958).
[9]J. E. E. Baglin *et al.*, Nucl. Phys. A201, 593 (1973).
[10]J. A. Galey, Phys. Rev. 117, 763 (1960).
[11]D. M. Skopic *et al.*, Phys. Rev. C 9, 531 (1974).
[12]M. Bosman *et al.*, Phys. Lett. 82B, 212 (1979).
[13]E. Hadjimichael and D. P. Saylor, Phys. Rev. Lett. 45, 1776 (1980).
[14]E. Hadjimichael and D. P. Saylor, Nucl. Phys. A358, 325C (1981).