A RE-ANALYSIS OF THE EXPERIMENTAL DATA ON HYPERNUCLEI DECAYING BY π^- EMISSION †(*)

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The survey presented at the 1957 Rochester Conference (Proceedings VIII, pp. 9-10) has been prepared for publication and is to appear in Nuovo Cimento. The following table, extracted from this forthcoming paper, summarizes the main results and contains a comparison with the numbers as originally presented last year. The differences are due to the addition of a few events and to further recomputation, as well as to the adoption of a new Q-value for the free Λ^0 decay (as explained in footnote *b*).

Summary of binding energies of mesic decays. May 1958.

Identity	*As reported at Rochester April 1957* (a) B_Λ (MeV)	σ_{av} (MeV)	δ_{RE} (MeV)	No. of events averaged	*May 1958* (b) B_Λ (MeV)	σ_{av} (MeV)	δ_{RE} (MeV)	No. of events averaged (e)	Total
				Uniquely identified events					
$_\Lambda H^3$	0.25	0.31	0.2	9	0.20	0.50 (c)	0.2	7	9
$_\Lambda H^4$	1.44	0.20	0.25	21	1.81	0.20 (c)	0.25	21	26
$_\Lambda He^4$	1.70	0.24	0.2	9	1.99	0.20 (c)	0.2	9	9
$_\Lambda He^5$	2.56	0.17	0.2	15	2.82	0.20 (c)	0.2	17	19
$_\Lambda Li^7$	4.17	0.62	0.2	2	4.80	0.50 (d)	0.2	3	3
$_\Lambda Li^8$	5.2	1.0	0.3	1	5.60	0.40 (d)	0.25	3	3
$_\Lambda Li^9$	—	—	—	—	6.7	0.70	0.3	1	1
$_\Lambda Be^8$	5.9	0.5	0.2	1	6.25	0.60	0.2	1	1
$_\Lambda Be^9$	6.13	0.33	0.2	3	6.43	0.40 (d)	0.35	3	3
				Non-uniquely identified events					
$_\Lambda H^{2,3,4}$	−0.31	0.36	0.2	5	0.0	0.4 (c)	0.2	5	7
$_\Lambda He^{4,5}$	—	—	—	—	—	—	—	12	14
$Z > 2$	—	—	—	—	—	—	—	19	22

(*a*) Based on $Q_\Lambda = (36.9 \pm 0.2)$ MeV. (Friedlander, Keefe, Menon and Merlin, Phil, Mag. *45*, 533 (1954), recalculated value, 1957, private communication).

(*b*) The value of Q_Λ used in the present computation is (37.22 ± 0.2) MeV. This value is based on a recomputation (36.75 ± 0.2) MeV, of the events of Friedlander, *et al.* (a) using the latest range-energy relation (R4) combined with the value (37.45 ± 0.17) MeV given by W. H. Barkas, P. C. Giles, H. H. Heckman, F. W. Inman, C. J. Mason, and F. M. Smith, Padua-Venice Conference, Sept. 1957.

(*c*) σ_{av} obtained from the distribution of B_Λ. $\sigma_{av} = \left[\dfrac{\Sigma\,\omega_i\,(B_{\Lambda i} - \bar{B}_\Lambda)^2}{(n-1)\,\Sigma\omega_i}\right]^{1/2}$, $\omega_i = (\delta E)^{-2}$

(*d*) $\sigma_{av} = (\Sigma\,\omega_i)^{-1/2}$

(*e*) Only events in which the π^- stops in the emulsion have been included in the averages.

† Appendix to Session 6. — Experimental.

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