at such high pressures was in general relatively unaffected by changes of environment or pretreatment of the spores, the experimental pressure range was restricted to 1000 atm. maximum.

Of a variety of substances tested, amino acids were clearly the most effective potentiators of pressure germination. For example, inspection of the results summarized in

Table 2. *Pressure germination of Bacillus coagulans spores in aerobic and anaerobic media*

Medium	Ungerminated spores (%) following pressurization* at 2000 atm.	Ungerminated spores (%) following pressurization* at 3000 atm.
Aerobic		
Water	$1{\cdot}7 \times 10^{-4}$	
Buffer†		$1{\cdot}2 \times 10^{-3}$
Yeast glucose broth	$1{\cdot}2 \times 10^{-4}$	
Anaerobic		
Buffer plus thioglycollate†		$1{\cdot}0 \times 10^{-3}$
R C M‡	$1{\cdot}3 \times 10^{-4}$	

* Pressurization was for 30 min. at 70°. Ungerminated spores were estimated by viable counts.
† Buffer was 0·1 M-sodium phosphate (pH 8·0); sodium thioglycollate was used at 0·1 % (w/v).
‡ Reinforced Clostridium medium (Gibbs & Hirsch, 1956).

Table 3. *Initiation of spore germination by pressure at different temperatures*

Organism	Addition‡	Germination (%)* after pressurization† at 0°	20°	30°	40°	50°	60°	70°
Bacillus coagulans	None	0	0	1	0	50	60	0
	L-Alanine (250 μM)	0	0	5	>95	>95	>95	50
	L-Alanine (1 mM)	0	0	12	>95	>95	>95	50
B. subtilis var. *niger* (syn. *globigii*)	None	1	1	2	3	10	10	8
	L-Alanine (250 μM)	1	1	50	50	75	30	25
	L-Alanine (1 mM)	1	1	68	>90	70	36	13
B. cereus T	None	0	0	21	40	64	5	—
	L-Alanine (250 μM)	12	>95	>99	>99	>99	>99	95

* Spores were activated (70°, 30 min.) before use; germination was measured by recording the percentage of phase-dark spores.
† Pressure was 250 atm. maintained for 30 min.
‡ Suspending medium was 0·1 M-sodium phosphate (pH 8·0).

Table 4 indicated that spores of *Bacillus cereus* could be caused to germinate at 1 atm. by a variety of amino acids, particularly at the higher concentration used (10 mM) and in the presence of inosine. Germination of *B. cereus* spores caused by pressure was similarly potentiated by a variety of amino acids. In contrast, spores of *B. coagulans* were much less responsive than those of *B. cereus* to amino acids at 1 atm., germinating rapidly only in L-alanine, and much less rapidly in L-α-aminobutyric acid and L-valine; similarly, the range of amino acids potentiating germination at 200 atm. pressure was much more restricted than the range potentiating germination of spores of *B. cereus*. Amino acids were effective germinants at 200 atm. at concentrations well below those effective at 1 atm.