being less than 0.01). The difference for 2 concentrations is not significant. Further, it is evident that irradiation of thymidine diminishes its mutagenic effectiveness. It may be seen from the Table that quite often the lethals appear in bunches. The phenomenon of 'clusters' would indirectly indicate that thymidine is entering the germ cells of the male gonads in the early stages of the larval development. Again the mechanism of the mutagenic action of thymidine is not clear and may be sought in terms of the above considerations; however, this is just a tentative hypothesis[9].

Zusammenfassung. Wird Thymidin dem Standardnährboden von *Drosophila* zugefügt (1–2%), erweist es sich als teratogen. Bei Versuchen mit verschiedenen Stämmen von *D. melanogaster* traten in allen Fällen nach Behandlung wiederholt morphologische Missbildungen einer ganz bestimmten Kategorie auf. Ausserdem erwies sich Thymidin bei diesen Konzentrationen auch als mutagen zumindest in bezug auf die Auslösung geschlechtsgebundener rezessiver Letalfaktoren. Der mutagene Effekt kann durch Röntgenbestrahlung des Thymidins vor der Anwendung herabgesetzt werden. Auf die möglichen Ursachen der teratogenen und mutagenen Wirkung des Thymidins bei *D. melanogaster* wird hingewiesen.

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Reversal of the Inhibitory Effect of (2-Chloroethyl)trimethyl-ammonium Chloride on the Flowering of *Chenopodium rubrum* L. by Kinetin

In a previous paper[1] it had been shown that (2-chloroethyl)trimethylammonium chloride (CCC) ($2 \times 10^{-3} M$) delays flowering of *Chenopodium rubrum* L. and that this inhibition is completely reversed by gibberellic acid (0.1 or 0.05 mg/l). Further experiments proved that the effect of CCC may be reversed also by kinetin.

The seeds of *C. rubrum* were kindly provided to us by Prof. B. G. CUMMING, University of Western Ontario, Canada. The plants were grown on half concentrated Knop's solution under constant conditions as described previously[1]. After 4 days of cultivation under non-inductive conditions, they received 4 inductive long nights of 16 h, after which they were again transferred to continuous light. On the 13th day after emergence their developmental stage was estimated according to the length of the shoot apex or of the floral bud correlating with the degree of differentiation. CCC ($2 \times 10^{-3} M$) was added to the nutrient solution during induction, kinetin was applied to the apical bud 3 times (at 5 μl) during induction. The number of plants/variant was 30. The experiments were repeated 5 times.

As illustrated in the Table kinetin at a concentration of 1 mg/l reversed the inhibitory effect of CCC even though reversal was not always complete. When applied alone kinetin strongly inhibited flowering.

The differences between the single treatments are significant (on the 1% level) with exception of the difference between the control and the joint application of CCC and kinetin.

Effect of different treatments on length of floral bud in *Chenopodium rubrum*

Treatment	Length of floral bud (mm)
Control	0.20 ± 0.0091
CCC $2 \times 10^{-3} M$	0.15 ± 0.0048
kinetin 1 mg/l	0.12 ± 0.0073
CCC $2 \times 10^{-3} M$ + kinetin 1 mg/l	0.19 ± 0.0062

Kinetin did not affect vegetative growth. The habitus of plants treated with kinetin did not differ from that of the controls. Plants to which both CCC and kinetin was applied resembled those having received kinetin alone.

Several authors have described a reversal of the inhibitory effect of CCC brought about by growth substances other than gibberellin. The possibility of reversing the effect of CCC by kinetin has been stated by KNYPL[2] in kale seeds and by RENNERT and KNYPL[3] in tobacco callus tissue cultures. These authors suggest that CCC might affect RNA directing the synthesis of proteins.

Our results may also be interpreted by assuming that the action of CCC was beyond the Ga system. As CCC was found to lower considerably the content of endogenous gibberellin-like substances in the apical buds of *Chenopodium*[1] and as gibberellin brought about a more pronounced reversal than kinetin both gibberellin synthesis and a more general process involved in flowering of this plant might have been affected by CCC. It is also possible that a disturbance of the endogenous balance of growth substances brought about by the application of high kinetin concentrations plays a role in the described effect.

Zusammenfassung. Chlorcholinchlorid (CCC) ($2 \times 10^{-3} M$) hemmt die Blühinduktion bei der Kurztagspflanze *Chenopodium rubrum* L. Es wird gezeigt, dass diese Hemmung nicht nur durch Gibberellinsäure, sondern auch durch Kinetin (1 mg/l) aufgehoben werden kann. Eine Behandlung mit Kinetin derselben Konzentration allein (ohne vorherige Applikation von CCC) blockiert die Blühinduktion bei *C. rubrum* fast vollständig. Der Mechanismus der CCC-Wirkung auf die Blühinduktion wird diskutiert.

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