Interference of compressional and strike-slip related structures in the Semanggol Formation strata of N. Kedah

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The Semanggol Formation strata of N. Kedah have been said to have undergone a single phase of deformation resulting in open to slightly asymmetric folds that way show some complexities where modified by reversed or thrust faults.

The regional fold trend is N-S, but in the southern part of the area, an anomalous, previously unrecognized, E-W trending folds with steeply plunging fold axes have been mapped out. Strike ridges swing into 'z'-arrays and form en-echelon arrangement in this part of the area. Field studies show that these folds were formed by drags along generally N-S striking steeply dipping faults. The 'z'-arrays of associated minor steeply plunging folds suggest that these faults are dextral strike-slip faults. Interference patterns suggest overprinting of the 2 fold trends implying the strata have undergone multiple deformation.

A model is proposed in which the en-echelon and 'z'-array nature of the strike-ridges in the area are interpreted as the result of right-lateral movement along strike-slip faults that was superimposed on the previously formed N-S trending folds.

As both the N-S trending folds and the strike-slip related structures shows the effect of drags due to intrusion of the Bukit Perak granite and movement along the Baubak fault, both structures may have formed subsequently, within the same time span, pre-dating the granite intrusion.

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The occurrence of both compressional and strike-slip related structures in the area suggest that deformation, as a whole can be described as transpressive and this may imply that the closure of the Semanggol Basin at least for the N. Kedah part must be oblique.