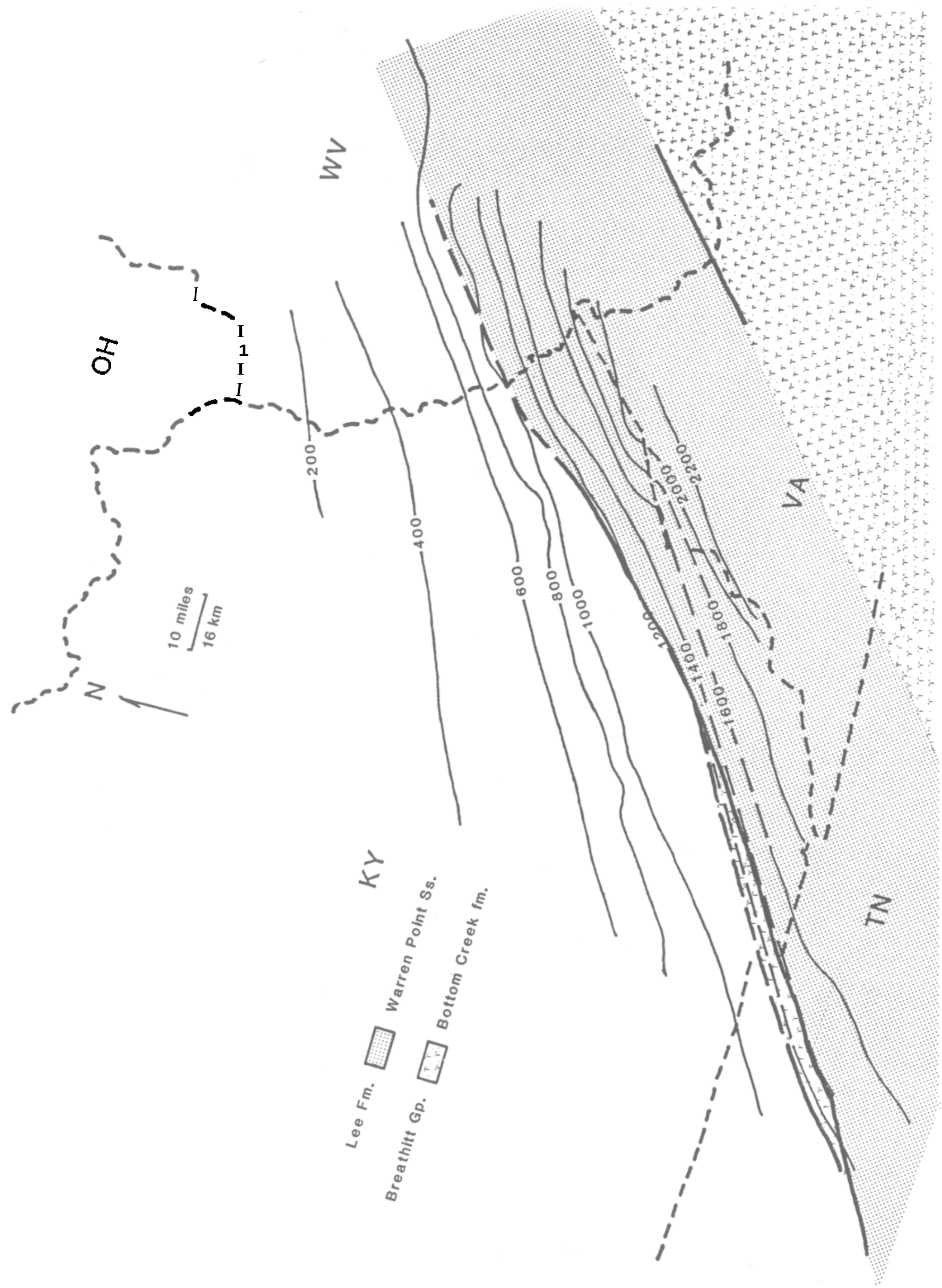

OH
WV
KY
VA
TN
N
10 miles
16 km
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
Lee Fm.
Warren Point Ss.
Breathitt Gp.
Bottom Creek fm.

Figure 46. Location of the Sewanee sandstone belt and laterally equivalent lithologies of the Breathitt Group. The blank area northwest of these lithologies represents the unconformity surface exposed during Sewanee deposition. All data were plotted on a palinspastic base map. Contours indicate the depth to the unconformity at the end of Lee deposition.

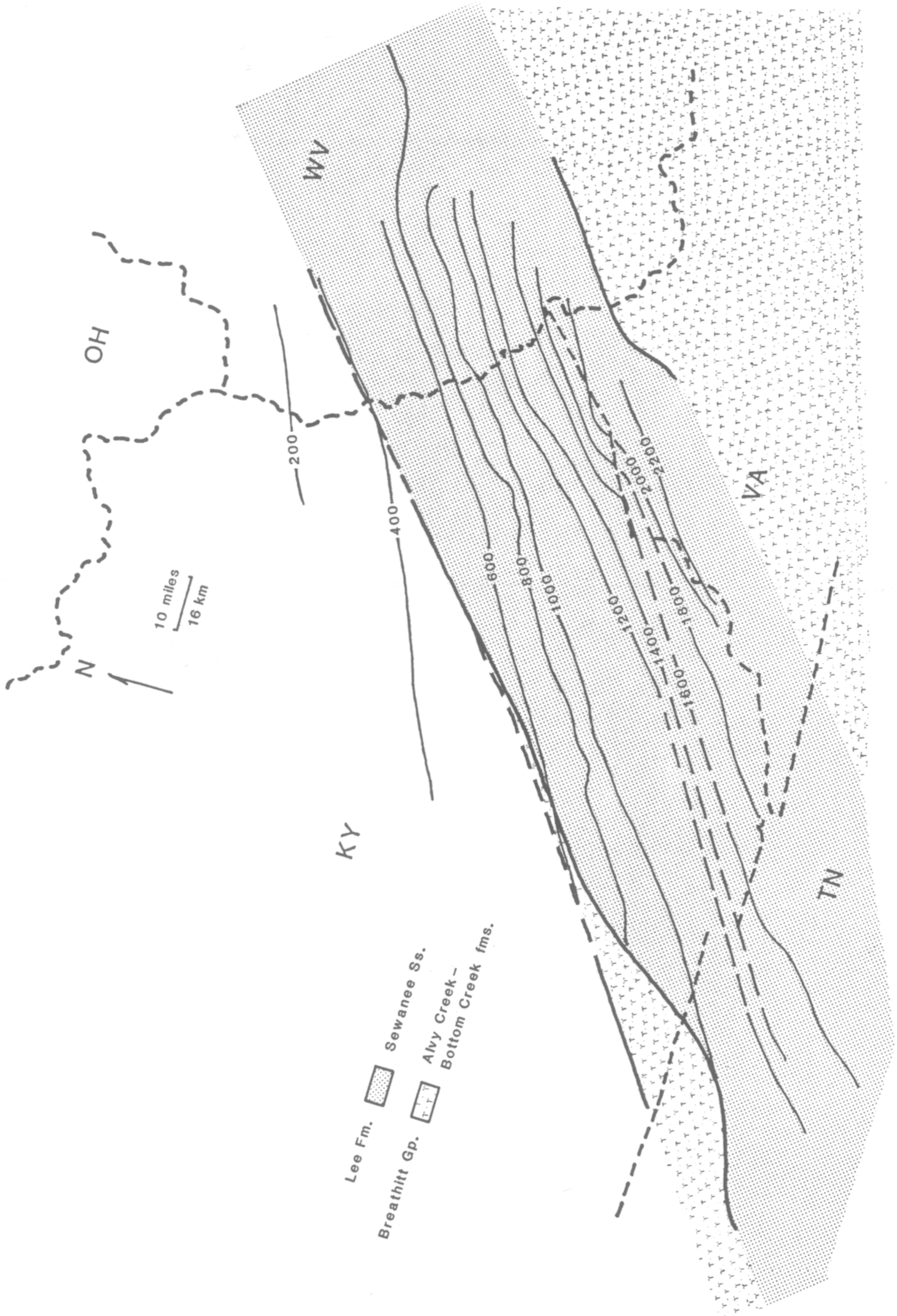

WV
OH
KY
VA
TN
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
10 miles
16 km
N
Lee Fm.
Sewanee Ss.
Breathitt Gp.
Alvy Creek – Bottom Creek fms.

Figure 47. Location of the Bee Rock sandstone belt and laterally equivalent lithologies of the Breathitt Group. The blank area northwest of these lithologies represents the unconformity surface exposed during Bee Rock deposition. All data were plotted on a palinspastic base map. Contours indicate the depth to the unconformity at the end of Lee deposition.

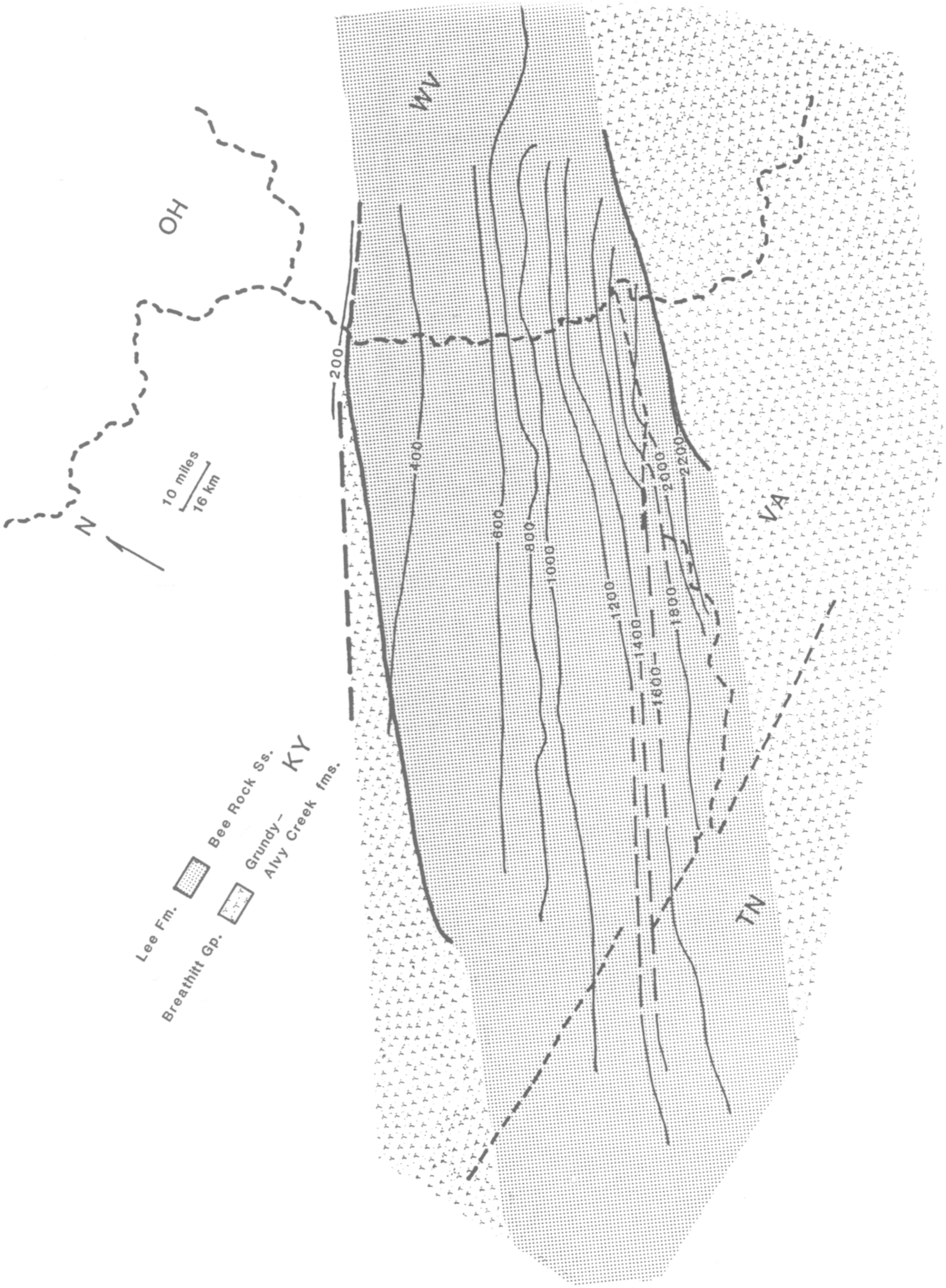
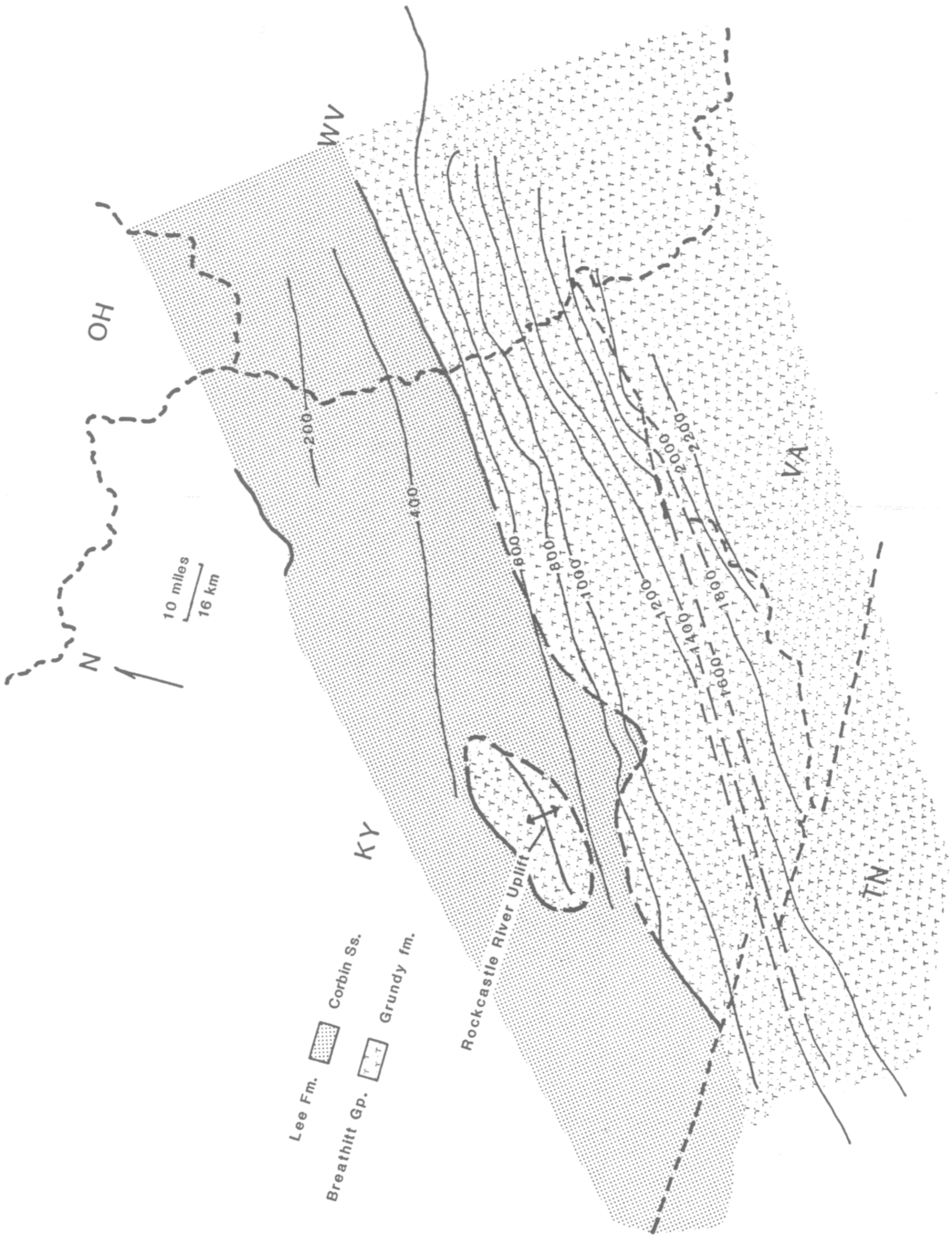

WV
OH
KY
VA
TN
N
10 miles
16 km
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
Lee Fm.
Bee Rock Ss.
Breathitt Gp.
Grundy–Alvy Creek fms.

Figure 48. Location of the Corbin sandstone belt and laterally equivalent lithologies of the Breathitt Group. The blank area northwest of these lithologies represents the unconformity surface exposed during Corbin deposition. Details along the western belt of outcrop were adapted from Rice (1984, fig. 27). Contacts are dashed where poorly known. The axis of the Rockcastle Uplift appears to coincide with a local absence of the Corbin. All data were plotted on a palinspastic base map. Contours indicate the depth to the unconformity at the end of Lee deposition.


OH
WV
KY
VA
TN
N
10 miles
16 km
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
Rockcastle River Uplift
Lee Fm.
Corbin Ss.
Breathitt Gp.
Grundy fm.

are known but probably represent coalescing sandstone bodies. The 65 to 130-foot (20 to 40-meters) thick sandstones are separated by thin beds of coal, rooted underclay, shale, and siltstone.

The regional gradient of the unconformity surface during deposition of the Lee Formation is shown with the Lee sandstone belts (Figs. 45-48). The trend of the Lee sandstone belts are at a slight angle to the topographic trend of the unconformity surface, over which the sandbelts were deposited. This angle indicates a gradient for the sandbelts to the southwest. The average slopes for the sandbelts are: (1) 0.0005 (0.5 m/km, 2.7 ft/mile) for the Warren Point, (2) 0.0007 (0.7 m/km, 3.7 ft/mile) for the Sewanee, and (3) 0.0004 (0.4 m/km, 2.1 ft/mile) for the Bee Rock. The average slope for the Corbin could not be calculated because the northwestern edge of the belt has been largely eroded in the study area.

The Lee sandstone belts can be extended to include Early Pennsylvanian Lee-type lithologies which have been recognized in other parts of the Appalachian Basin (Fig. 49). Cross-bed measurements of the Lee and Lee-type lithologies (Figs. 50-53) indicate that the dominant current directions were parallel to the reconstructed sand belt, that is, to the southwest in Kentucky, Virginia, and

Figure 49. Projected occurrences of sandstone belts of the Lee Formation compiled from information in Stearns and Mitchum (1962), Ferm and Cavaroc (1969), Arkle and others (1979), Milici and others (1979), and Weisenfluh (1979, fig. 4, 7) as well as this study. The area between the Cincinnati Arch and the sandstone belts largely represents exposed lowlands (unconformity surface). Preserved remnants of Breathitt lithologies on the southeastern side of the sandstone belts are found in Alabama, Virginia and West Virginia. The dotted lines represent outcrop of Pennsylvanian rocks.

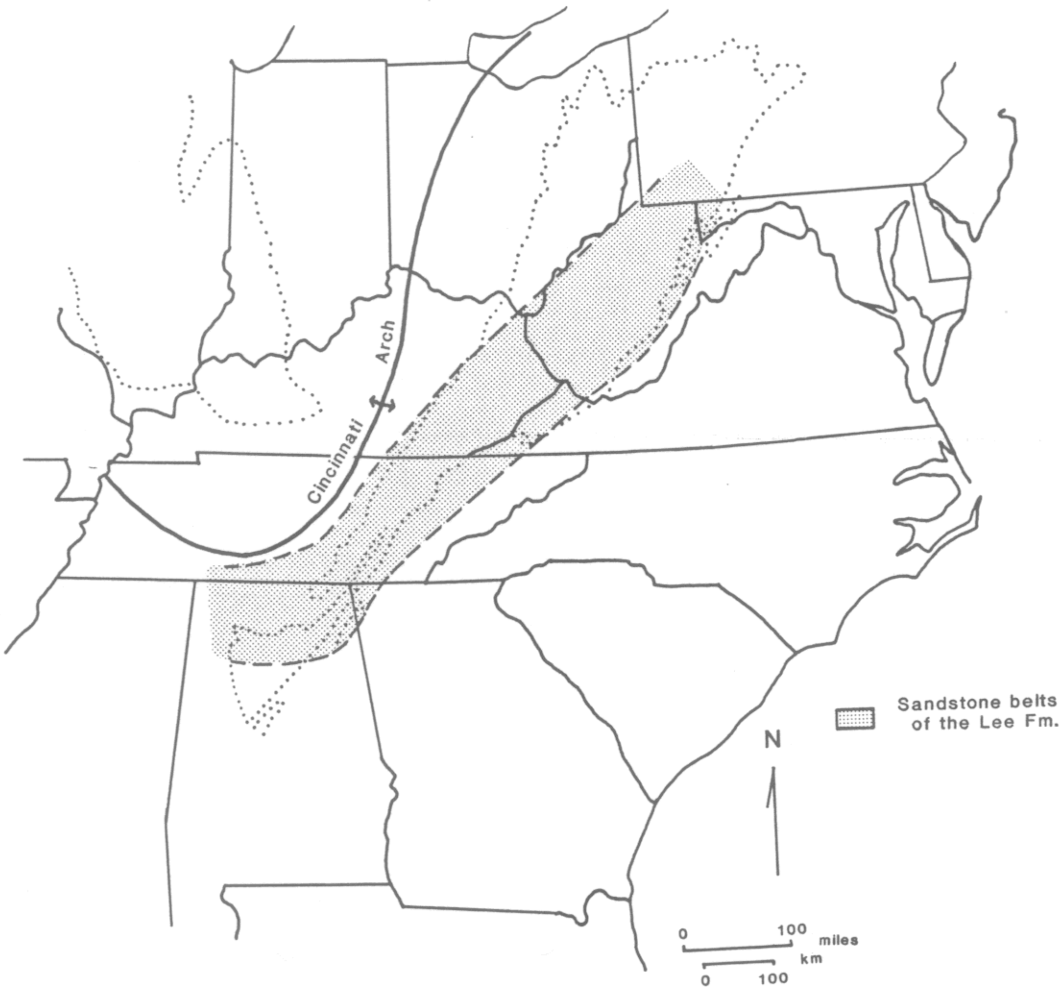

Cincinnati Arch
Sandstone belts of the Lee Fm.
N
0 100 miles
km
0 100

Figure 50. Dip directions of crossbeds in the sandstones of the Lee Formation compiled by Bement (1976, fig. 37).

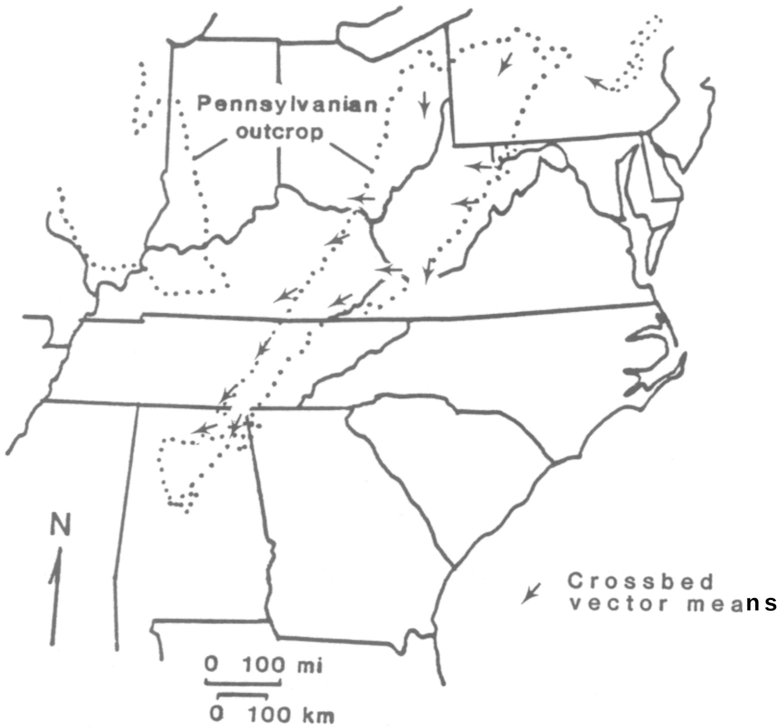
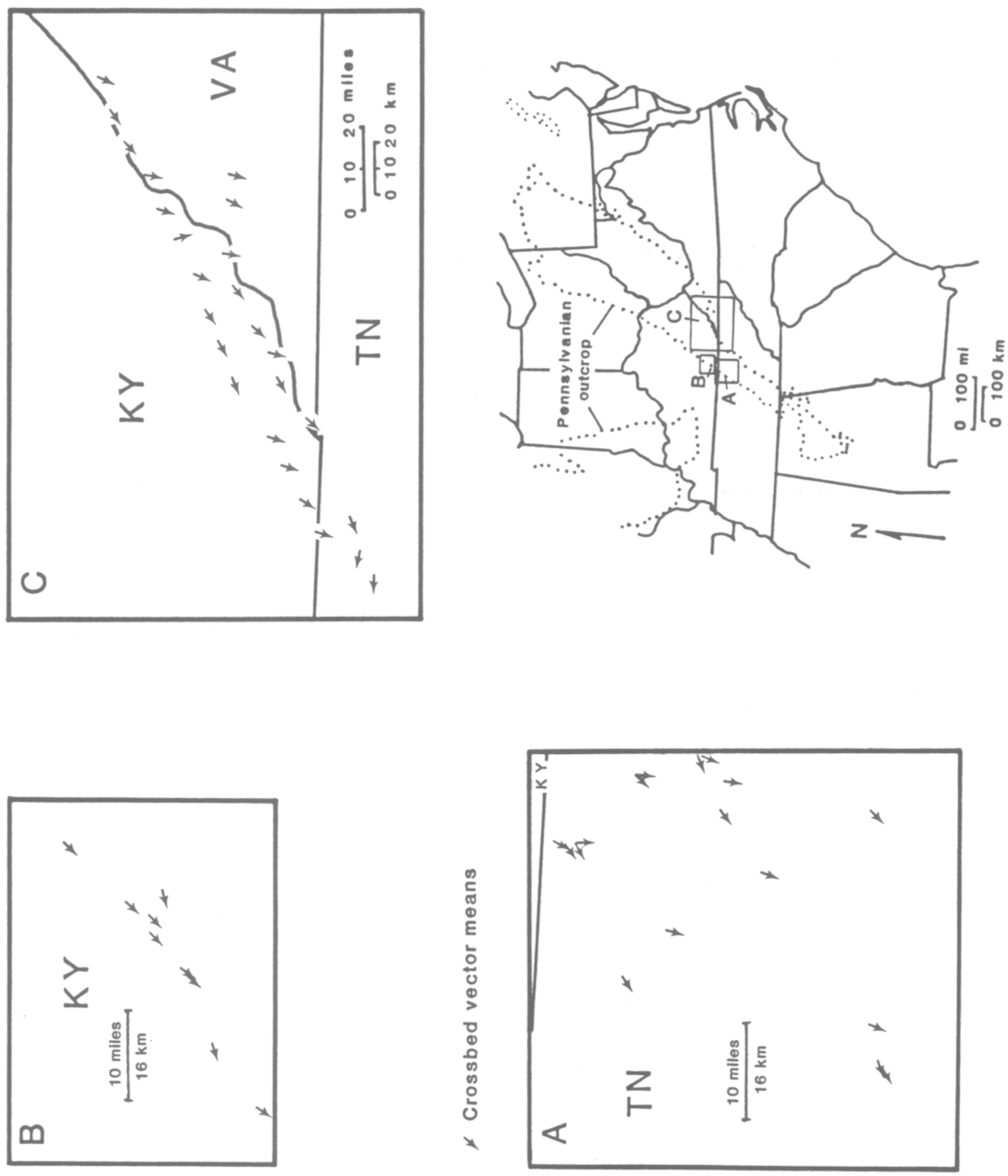

Pennsylvanian
outcrop
N
Crossbed
vector means
0 100 mi
0 100 km

Figure 51. Dip directions of crossbeds in the sandstones of the Lee Formation measured by (A) Jackson (1984, fig. ll), (B) Green (1982, fig. 40), and (C) Bement (1976, fig. 25.



C
KY
VA
TN
0 10 20 miles
0 10 20 km
Pennsylvanian outcrop
A
B
C
0 100 mi
0 100 km
N
B
KY
10 miles
16 km
Crossbed vector means
A
TN
KY
10 miles
16 km