

of pond with seepage only and this water on matted grass instead of  
 formed channel. Water of pond open. Noted 2 meadowlarks  
 and 4 robins. 12:55 point of ridge. Redtail circling above.  
 one eastern bluebird flew by. 1:00 pond Creek with water  
 running 1 gal per second. 1:05 drainage, 1 gal per second. All  
 water clear. Yellow-shafted flicker. 1:08 creek with 1 gal per  
 second. Most of these drainage support about the same amount  
 of water. 20 horned larks left ridge. Estimate the dis-  
 tribution of cow dung as 15 feet separation. The amount  
 within a single drainage system would make a substantial  
 amount of energy returned to the soil, Chickadee here.  
 1:16 top ridge at point. On these traverses the microtine  
 runways were uncommon to rare where in previous years they  
 were common. The lack of microtine activity is associated  
 with overgrazing and destruction of overhead protection. Run-  
 ways were most common where shrubs and fallen trees had  
 protected the grass from grazing by cattle. On top noted  
 1 downy woodpecker, 1 rattail. Isolated trees had been cut  
 to promote growing of grass. 1:20 pond. The outlet from  
 pond had eroded to deep channel and had deposited a red tail  
 over grass of drainage below. The riparian trees along this  
 drainage have been cut down. 1:25 redtail. 1:30 juniper  
 tree at fence-line. A great horned owl left this tree on our  
 approach. Mammal bone were on ground under tree from owl  
 pellets and feeding. <sup>got drunk</sup> Lunch here. Left 1:50 red-bellied woodpecker,  
 Chickadee & wren in area. Redtail just beyond. 2:10 crossing  
 of solid bedrock creek bed. Water 1 gal per second. 15 crows in  
 on flock on ridge to E. 2:10 edge of forest trail. Along this  
 trail, still in snow, were tracks of deer, coyote, opossum and dog.  
 Fox squirrel tracks about 1 per 50'. Only 3 rabbit tracks. 2:30  
 base of hill. Cardinal and titmouse. Returned via base of  
 hill at edge of valley, mainly deciduous forest. Lunch at old  
 elm tree. Some raccoon tracks near tree. Left 3:10 Birds  
 observed in forests to next opening were 7 chickadees, 1 crow,  
 1 bluejay, 4 chickadees, redtail, chickadee, downy, 4 chickadees,  
 1 great horned owl (on nest in slender dead tree). <sup>Engelhardt</sup> ~~Entered~~ <sup>to</sup>  
 across <sup>meander</sup> 2 drainages, thence thru forest trail to open field of relat-  
 ively ungrazed *Andropogon* arriving at 4:00. The *Synaptomyza* marsh  
 had been completely trampled by cattle and no microtine activity present.  
 The Wakarusa had been up to upper slopes of channel but now 1/2 level.  
 Birds observed from 4:00 to 4:37 are: ♂ ♀ bluebird, group 8 cardinals