MIDDLE PACIFIC COAST REGION—Spring migration on the central California coast continues to defy patterns. Based on reports from our contributors and on a close and continual survey of two San Francisco Bay area tracts by Robert Paxton and two

co-workers, it appears that—at least along the coast—weather systems played no discernible role in the flunctuation of spring migrants this year, with the possible exception of a retarding effect of numerous cold fronts resulting in postponement of first arrivals.

A brief summary of the dominant weather patterns of the Middle Pacific Coast Region by Robert Paxton will perhaps help explain why migration theories tailor-made to fit the weather system correlation of eastern migration simply do not fit spring migration in this Region. Like the East Coast, the central California coast is dominated by a permanent area of high pressure. Unlike the Bermuda High, however, the Northeast Pacific High almost never brings its trailing (western) edge with prevailing southerly winds to bear on coastal California. Characteristically, it presents its leading (eastern) edge to the coast, with prevailing northerly winds. Instead of recurring anticyclonic warm fronts, the central California coast receives recurring anti-cyclonic cold fronts. Maritime polar air from the Gulf of Alaska moves repeatedly into northern California in the course of the spring, and while a high pressure cell forms frequently over the Great Basin (see U. S. Weather Bureau daily maps for April 7 and 14, 1962 for examples), the southerly winds of its trailing edge do not appear to influence the area west of the Sierra.

This is not to say that no southerly winds occur on the central California coast. Upon approach of a Low from the Gulf of Alaska, a cyclonic southwesterly wind may occur over the central California coast as the southern leading edge of the Low crosses the coast. This is a storm wind, usually accompanied by rain. More importantly, this type of weather system does not affect the migration source areas to the south; it provides no continuous system of southerly winds along the length of the coast. (For an example, see U. S. Weather Bureau daily map for March 16 and 17, 1962.) In an average spring, these cyclonic disturbances do not reach the central California coast after late March, when the Northeastern Pacific High moves into its more northerly summer position.

In summary, weather systems are only rarely favorable to northward-bound migration in the Middle Pacific Coast Region, and at times, are unfavorable to it. At best, weather in central coastal California seems to be a permissive influence on migration, not a stimulant. "Pressure-pattern flying" does not favor the survival of migratory birds along the central California coast.

By way of illustration, we summarize the prevailing winds for March, April, and May 1962, as recorded by the U. S. Department of Commerce Weather Station at the Oakland International Airport. Easterly or southerly winds prevailed on only eight days in March, six of them with rain—typical cyclonic disturbances. In April, northwesterly winds prevailed on every day except April 13 and 17 when northerly winds prevailed and when, incidentally, an important migration movement was taking place. Northwesterly winds prevailed every day in May except for May 7, with northerly winds, and four days with southwesterly winds, two of them with light precipitation.

Close scrutiny of the U. S. Weather Bureau daily maps offers no single explanation for the periods of population flunctuation in the San Francisco Bay area tracts censused this spring. These periods, along with the species then present in *peak* numbers, were:

March 16-18	(Orange-crowned Warbler)
March 23-27	(Orange-crowned Warbler; Cliff Swallow; Wilson's Warbler)
March 30-31	(Warbling Vireo; Western Flycatcher; Wilson's Warbler)
April 4-6	(Wilson's Warbler; Black-headed Grosbeak)
April 14-18	(flycatchers; MacGillivray's Warbler)
April 25-27	(Swainson's Thrush; flycatchers)
May 7-11	(Western Wood Pewee; Swainson's Thrush)
May 16-21	(Western Tanager; Townsend's Warbler)

Although the high migrant population of March 16-18 coincided with cyclonic southwesterly winds, a similar storm on March 22 had no appreciable effect. In general, periods of increased migrant population occurred in stable periods, when the prevailing northwesterly winds were relatively light.

Although weather systems appear to have no stimulating or releasing effect upon spring migrants along the coast, they may well have a retarding effect. Numerous or prolonged cold fronts in March may postpone first arrivals. This appears to have been the case this year.

Temperature data recorded by the Weather Station at Oakland Airport show that average temperatures in March were below normal on every day except four. The arrival dates of most species arriving in February or March were considerably later than normal. Donald D. McLean at San Jose reported the

arrival dates of eighteen key species over the past five years; in every case, the arrival dates for 1962 were later, and in some cases as much as two weeks later, than in previous years.

Two other conclusions can be drawn from the intensive censusing of the two Bay Area tracts. In the first place, influxes did not exactly coincide in the two areas. The total impression suggested a continuous filtering through of migrants, which gathered into waves only locally. The second general conclusion about coastal migration is its paucity. In one area peak migration populations exceeded only slightly the final breeding populations of Black-headed Grosbeaks, Swainson's Thrush, Wilson's Warbler, and Orange-Crowned Warbler. From the evidence of field observation, the coastal zone is not an area of mass wave migration.

Surveys of migration in the Region have inevitably stressed the immediate coastal area, where a majority of observers have worked. The role of the inner coastal range, the Central Valley, and the foothills as migration routes is less fully understood. Future studies may well verify the general impression that interior areas support a far larger migrant population than the coast, perhaps with more constant weather correlation. Some data which already tend to fortify this impression will be found below, in particular under "Warblers."

Fulmars, Shearwaters—After exceptional winter concentrations of Fulmars along our coast, only single birds were located near the Farallon Islands and in Monterey Bay through mid-April. George P. Lamont, who closely followed the Fulmar flight in Monterey Bay, writes us that the light-phased birds—believed to be breeding farthest north—were very scarce in November–December, their proportionate numbers increased noticeably in January–February (although still outnumbered by the dark form), and the last few birds seen in April were all in light plumage. Six or more Sooty Shearwaters off Point Pinos on March 31 were the first seen in Monterey Bay this spring, and about a thousand were estimated in the same area on April 8 (*GPL*); but on two boat trips off San Francisco only 150 were seen on April 19, and 3 on May 20, with no white-bellied species observed on either trip (*PDeB*).

Waterfowl, Vultures, Kites—Several observers commented on the departure of the last of our wintering waterfowl during the middle of April: Large flocks of geese—mostly moving at night—passed over the Sacramento area, April 11 through 15 (*FGE, et al.*); and several flights of Canada Geese were reported from the northern Sacramento Valley on April 11 and 19 (*VKC*). Most of the remaining diving ducks disappeared from San Leandro Bay shortly after April 15 (*ER*). Two reports of unusual stragglers were received: An immature Oldsquaw was noted on the lighthouse pond at Pacific Grove, Monterey Co., on May 22 and 25, and found dead on May 27 (specimen, *RLB*); and a male was at Bodega Bay on May 5 (*BDP*), and again observed there on May 30, when it displayed apparently healthy behavior (*MM*). Ten Turkey Vultures (and 6 Ravens) came to feed on meat scraps one hour after the observer placed the tidbits on a bare spot in the vicinity of Springville, Tulare Co., on April 30 (*MEM*). From 1 to 3 White-tailed Kites were reported from the Pt. Reyes Peninsula, Marin Co., in April and May (*GM, AW*)—a northern coastal location where they are of sporadic occurrence; on April 22, in Samuel Taylor Park, Marin Co., 2 were perched on Douglas Fir and Coast Redwood—a most atypical habitat for this species (*HLC*).

Shorebirds, Gulls—Semipalmated Plovers were conspicuous in migrating flocks at Bolinas Bay on April 22; 100 were at the mouth of Walker Creek, Tomales Bay, on April 29 (*AW*); and small flocks were still at Bodega Bay on May 5 (*BDP*). They were reported as "last seen" on April 27 at Los Banos, San Joaquin Co. (*JK*), where they are not common. There are additional reports of Am. Golden Plovers, exceptionally numerous last fall and recorded during the winter: 1 at Bolinas Bay on March 13, and 3 in a field on the Pt. Reyes Peninsula on March 20 (*AW*). At Bodega Bay, where the species was frequently reported during the past season, one—in breeding plumage—was still present on May 5 (*BDP*). The prize for choosing the most unlikely habitat and location surely goes to 3 *Surfbirds*, in full breeding plumage, resting in a rice field just north of Firebaugh in the San Joaquin Valley, on April 28 (*EDS, TS, CS, et al.*). This is apparently the first inland record in the western states south of the Canadian border, some 100 miles from the rocky ocean shores with which this species is so closely associated during spring migration at our latitude. A Pectoral Sandpiper was found near Woodland, Yolo Co., on May 12 (EDS., *PDeB*); and a Baird's Sandpiper at Moss Landing, Monterey Co., on April 28 (*LF & CS*). These two sightings—and a record of the latter species reported on April 21, 1961, at Folsom Dam, Sacramento Co. (*GMcC*)—are the only *spring* records known to us for either species since at least 1954. On April 20, a thousand Northern Phalaropes were estimated in one hour, flying in an *east-west* direction along the Pacific Grove and Monterey shoreline (*GPL*). Several hundred Red Phalaropes—seldom traveling close to shore during spring migration—were reported from Monterey Bay on May 17 (*RLB*), and large numbers were observed during May along the coast from Moss Landing to San Mateo County; most of them were in breeding plumage (*CS*). An adult *Franklin's Gull* was feeding with a flock of immature Ring-billed Gulls in a marsh near Woodland, Yolo Co., on May 12, one of the few records from central California (EDS., *EAA & CS*). Some 75-100 Sabine's Gulls were seen between San Francisco and the Farallon Islands on May 20 (*G.G.A.S.*).

Swifts, Hummingbirds—Black Swifts were first noted at their breeding grounds at MacArthur Burney Falls State Park, Shasta Co., on May 13 (*CDT*). On the same date, Vaux's Swifts were common migrants near Lake Almanor, Plumas Co., and were reported passing over the Sacramento Valley on the preceding day. On the coast, the latter species was first noted at Inverness, Marin Co., on April 10 (*AW*), but they apparently had not yet arrived on April 15 at

a known nesting area near Duncan Mills, Sonoma Co. (*BDP*); arrival date at San Jose was April 19 (*DMcL*). On May 27, a male Costa's Hummingbird was found for the third consecutive year in a pass just west of Patterson, Stanislaus Co. (*PDeB, GSP & MS*). We have no reports indicating breeding activity in this location other than this year's observation of "dancing" before a Black-chinned–Costa's type female; the nearest known nesting record is from the vicinity of Dos Palos, Merced Co., 50 miles to the south. Two male Allen's Hummingbirds—rare spring migrants in the interior were seen daily for two weeks in late March and early April near Sacramento (*AJA*), and one was at Courtland, Sacramento Co., on May 27 (*ERP*). Calliope Hummingbirds arrived north of Yreka, Siskiyou Co., on April 6 (*MSC*), and at least 6 migrant males were still on the north slope of Mt. Hamilton, Santa Clara Co., on April 28 (*ROP, et al.*).

Flickers, Flycatchers, Nutcrackers—An apparently "pure" female Yellow-shafted Flicker was observed with 1 or 2 Red-shafted Flickers on the Bear Valley Ranch, Marin Co., on April 22 (*HLC*). An early date for an Ash-throated Flycatcher is March 4, at the Yolo Bypass (*BK, et al.*). A Cassin's Kingbird was reported from southern Monterey County on April 24 (*GPL*); this species should be looked for as a breeder in that area, as well as in southern San Benito County. Donald McLean reported *Traill's Flycatchers* regularly in the San Jose area, noting their arrival on April 21 on his local list of key migrants (average arrival date during past 5 years: April 20); and nesting pairs were in this same area along the Guadalupe River, Santa Clara Co. A pair was identified by song along a stream 12 miles west of Patterson, Stanislaus Co., on May 27 (*PDeB, GSP & MS*). This *Empidonax* of particular narrow habitat requirements was believed to have virtually disappeared from the San Francisco Bay area in recent years. A small "pile-up" of Western Wood Pewees was reported from Springville, Tulare Co., on May 13, when 26 of these flycatchers were flitting around a yard in a rain storm (*MEM*). Clark's Nutcrackers, which staged a true invasion into the lowlands during the winter, were still present in the Santa Cruz area on May 27 (*CS*), and in Carmel on June 8 (*GPL*) —the same date the first young were reported from the Sierra (*GMcC*). Similar to observations on the Monterey Penninsula in early spring, *Audubon Field Notes* 16:(3):362, the birds were again reported to be feeding "young" near feeders in the Santa Cruz mountains during April (*JH, DBH*), but we were unable to obtain verification of actual nesting activity of this species in the lowlands.

Vireos, Warblers—Warbling Vireos, one of several March migrants arriving late, were not *heard* before well into April at a regularly covered area near Soquel, Santa Cruz Co. (*AJR*); and this usually vociferous species was located by sight before it was heard singing at two censused areas near Berkeley and Oakland (*MM*)—perhaps illustrating that the unusually low temperatures and frequent overcasts early in the season may have had an inhibiting effect on song activity of first arrivals. A local concentration of Yellow Warblers was reported on April 26 near Yreka (*MSC*); and just preceding a heavy shower on April 27, a group of 40 warblers—mostly Audubon's, interspersed with 5 other species—was noted at Mt. Diablo, Contra Costa Co. (*EAP*). An estimated 100-120 warblers—predominantly Wilson's, Nashville, and MacGillivray's—were at Caswell Park in the San Joaquin Valley on April 29 (EDS., *et al.*), with only 2 warblers there on May 5 (*BM*). On May 13, about 150 Yellow Warblers were concentrated in non-breeding habitat at the 4000 ft. level near Lake Almanor, Plumas Co. (EDS., *PDeB*). These reports represent chance observations, mostly on weekends, not suitable as a basis for generalized conclusions. But the fact that all of the migrant concentrations occurred at inland locations leads us to believe that a thorough study of some areas in interior central and northern California may shed new light on the migratory movements of some of our common landbirds. A *Northern Waterthrush* was seen on May 27 along the creek near St. Mary's College, Contra Costa Co. (*ASC*); this species is known to winter in Baja California and might possibly be a regular, though rare, migrant through our Region.

Blackbirds, Grosbeaks, Sparrows—A male Yellow-headed Blackbird was at Bodega Bay on May 5 (*BDP & AB*)—a favorite month for the few coastal spring records, usually of single birds. On May 13, several Tricolored Blackbirds were noted 10 miles southeast of Lake Almanor, Plumas Co., at an elevation of 4000 ft., with no suitable breeding habitat in the immediate area (EDS., *PDeB*). This general location—the Feather River drainage along the relatively low northern Sierra divide—may prove to be a migration route for birds seeking to cross the mountain range to reach northeastern California. (Later in the season, a breeding colony was discovered 30 miles east of Lake Almanor, at Honey Lake, Lassen County, located in the AFN Great Basin Region.) Black-headed Grosbeaks were considered the most numerous and conspicuous spring migrants by many observers—on the coast, in the foothills, and in the medium altitudes of the Sierra. Evening Grosbeaks, common in the lowlands last winter, had left most coastal areas by early April, but were reported widely through the end of that month in the Central Valley (*VKC, FGE, BK*). At Caswell Park in the San Joaquin Valley, 15 were located on March 24, at least 90 on April 29 (*PDeB*), but only one on May 5 (*BM*), suggesting a possible cross-valley movement during late April; however, 4 birds were still in the Monterey area on May 10 (*RLB*). A Slate-colored Junco remained in Lafayette, Contra Costa Co., until April 9 (*LF*), and another was seen in Berkeley on April 11 (*PDeB*). As usual, Golden-crowned Sparrows were the last of our common wintering sparrows to depart: 2 banded birds remained until May 8 at Soquel (*FH*). A White-throated Sparrow, which appeared sluggish and ill, was seen almost daily at a feeder in Inverness, Marin Co., until May 23 (*GM*). Last dates for Lincoln's parrows in the lowlands were April 3 at Mt. Diablo (*EAP*); April

7 near Monterey (*PDeB*); and April 13 at Chico (*VKC*).

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SOUTHERN PACIFIC COAST REGION.—Southern California was actually verdant for the first time in many years this spring season. The deluges of the