In [1]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import matplotlib.ticker as tic

In [2]: df=pd.read_csv("cleaned_rainfall")
 df

Out[2]:

index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6
1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2
2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0
3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4
4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0
4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2
4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8
4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0
4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2
4115	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4
	0 1 2 3 4 4111 4112 4113 4114	ANDAMAN & NICOBAR ISLANDS LAKSHADWEEP 4111 LAKSHADWEEP 4113 LAKSHADWEEP 4114 LAKSHADWEEP	ANDAMAN & 1901 ISLANDS ANDAMAN & 1902 ISLANDS ANDAMAN & 1902 ISLANDS ANDAMAN & 1903 ISLANDS ANDAMAN & 1903 ISLANDS ANDAMAN & 1904 ISLANDS ANDAMAN & 1904 ISLANDS ANDAMAN & 1905 ISLANDS 4111 LAKSHADWEEP 2011 4112 LAKSHADWEEP 2013 4114 LAKSHADWEEP 2014	ANDAMAN & 1901 49.2 ISLANDS ANDAMAN & 1902 0.0 ISLANDS ANDAMAN & 1902 0.0 ISLANDS ANDAMAN & 1903 12.7 ISLANDS ANDAMAN & 1904 9.4 ISLANDS ANDAMAN & 1904 9.4 ISLANDS ANDAMAN & 1905 1.3 ISLANDS	ANDAMAN & 1901 49.2 87.1 ISLANDS 1902 0.0 159.8 ISLANDS 2 NICOBAR ISLANDS 1903 12.7 144.0 ISLANDS 3 NICOBAR ISLANDS 1904 9.4 14.7 ISLANDS 1905 1.3 0.0 ISLANDS 1905 1905 1905 1905 1905 1905 1905 1905	ANDAMAN & 1901 49.2 87.1 29.2 SISLANDS 1902 0.0 159.8 12.2 SISLANDS 1903 12.7 144.0 0.0 SISLANDS 1904 9.4 14.7 0.0 SISLANDS 1905 1.3 0.0 3.3 SISLANDS 1905 1.3 0.0 3.3 SISLANDS 1905 1.3 0.0 3.3 SISLANDS 1905 1.3 1905 1.3 1906 3.3 SISLANDS 1905 1.3 1906 3.3 SISLANDS 1905 1.3 1906 3.3 SISLANDS 1907 1908 3.1 190	ANDAMAN & 1901 49.2 87.1 29.2 2.3 ANDAMAN & 1902 0.0 159.8 12.2 0.0 ISLANDS ANDAMAN & 1902 0.0 159.8 12.2 0.0 ISLANDS ANDAMAN & 1903 12.7 144.0 0.0 1.0 ISLANDS ANDAMAN & 1904 9.4 14.7 0.0 202.4 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1905 1.3 0.0 3.3 26.9 ISLANDS ANDAMAN & NICOBAR 1904 9.4 14.7 0.0 202.4 ISLANDS ANDAM	ANDAMAN & NICOBAR ISLANDS	ANDAMAN & NICOBAR ISLANDS 1901 49.2 87.1 29.2 2.3 528.8 517.5 1	ANDAMAN & NICOBAR ISLANDS ANDAMAN & NICOBAR ISLANDS 1 902 0.0 159.8 12.2 0.0 446.1 537.1 228.9 ANDAMAN & NICOBAR ISLANDS 2 NICOBAR ISLANDS 1903 12.7 144.0 0.0 1.0 235.1 479.9 728.4 ANDAMAN & NICOBAR ISLANDS 3 NICOBAR ISLANDS 1904 9.4 14.7 0.0 202.4 304.5 495.1 502.0 ANDAMAN & NICOBAR ISLANDS 4 NICOBAR ISLANDS 1905 1.3 0.0 3.3 26.9 279.5 628.7 368.7 ISLANDS 4 NICOBAR ISLANDS 1905 1.3 0.0 3.3 26.9 279.5 628.7 368.7 ISLANDS 4 NICOBAR ISLANDS 1905 1.3 0.0 3.3 85.9 107.2 153.6 350.2 4111 LAKSHADWEEP 2011 5.1 2.8 3.1 85.9 107.2 153.6 350.2 4112 LAKSHADWEEP 2012 19.2 0.1 1.6 76.8 21.2 327.0 231.5 4113 LAKSHADWEEP 2013 26.2 34.4 37.5 5.3 88.3 426.2 296.4 4114 LAKSHADWEEP 2014 53.2 16.1 4.4 14.9 57.4 244.1 116.1	ANDAMAN & 1901 49.2 87.1 29.2 2.3 528.8 517.5 365.1 481.1 ISLANDS 1902 0.0 159.8 12.2 0.0 446.1 537.1 228.9 753.7 ISLANDS 1903 12.7 144.0 0.0 1.0 235.1 479.9 728.4 326.7 ISLANDS 1SLANDS 1904 9.4 14.7 0.0 202.4 304.5 495.1 502.0 160.1 160.1 ISLANDS 1SLANDS 1905 1.3 0.0 3.3 26.9 279.5 628.7 368.7 330.5 160.1 LAKSHADWEEP 2011 5.1 2.8 3.1 85.9 107.2 153.6 350.2 254.0 4112 LAKSHADWEEP 2012 19.2 0.1 1.6 76.8 21.2 327.0 231.5 381.2 4113 LAKSHADWEEP 2013 26.2 34.4 37.5 5.3 88.3 426.2 296.4 154.4 4114 LAKSHADWEEP 2014 53.2 16.1 4.4 14.9 57.4 244.1 116.1 466.1

4116 rows × 20 columns

localhost:8888/notebooks/FR-(31-32).ipynb

In [3]: df["SUBDIVISION"].value_counts() Out[3]: KERALA 115 NORTH INTERIOR KARNATAKA 115 **TELANGANA** 115 GANGETIC WEST BENGAL 115 COASTAL KARNATAKA 115 EAST MADHYA PRADESH 115 UTTARAKHAND 115 **VIDARBHA** 115 KONKAN & GOA 115 COASTAL ANDHRA PRADESH 115 **JHARKHAND** 115 ORISSA 115 WEST MADHYA PRADESH 115 MADHYA MAHARASHTRA 115 **RAYALSEEMA** 115 WEST UTTAR PRADESH 115 ASSAM & MEGHALAYA 115 SOUTH INTERIOR KARNATAKA 115 HARYANA DELHI & CHANDIGARH 115 JAMMU & KASHMIR 115 EAST RAJASTHAN 115 **MATATHWADA** 115 NAGA MANI MIZO TRIPURA 115 SUB HIMALAYAN WEST BENGAL & SIKKIM 115 **PUNJAB** 115 HIMACHAL PRADESH 115 BIHAR 115 SAURASHTRA & KUTCH 115 EAST UTTAR PRADESH 115 CHHATTISGARH 115 TAMIL NADU 115 **GUJARAT REGION** 115 WEST RAJASTHAN 115 LAKSHADWEEP 114 ANDAMAN & NICOBAR ISLANDS 110 ARUNACHAL PRADESH 97 Name: SUBDIVISION, dtype: int64

UTTARAKHAND

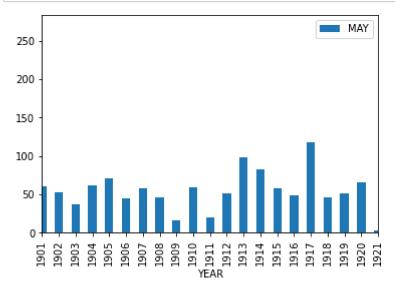
In [4]: dat1=df[df["SUBDIVISION"]=="UTTARAKHAND"]
 dat1

Out[4]:

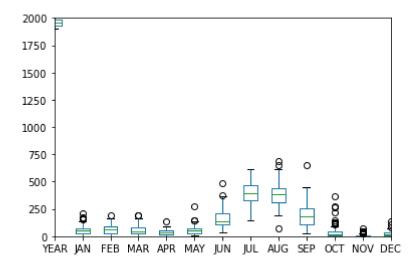
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1242	1242	UTTARAKHAND	1901	134.5	81.4	44.5	5.9	60.8	33.6	381.1	612.3	167.1	•
1243	1243	UTTARAKHAND	1902	0.0	17.0	52.2	63.7	52.1	113.1	444.1	327.5	220.4	
1244	1244	UTTARAKHAND	1903	68.0	7.9	87.6	10.3	37.5	83.0	251.6	442.7	249.3	
1245	1245	UTTARAKHAND	1904	40.0	5.2	78.3	13.6	61.1	180.1	449.6	417.2	174.1	
1246	1246	UTTARAKHAND	1905	115.4	80.7	99.8	26.1	70.3	111.5	299.9	349.5	129.5	
1352	1352	UTTARAKHAND	2011	30.9	65.2	18.0	30.9	84.2	223.1	433.3	523.7	148.4	
1353	1353	UTTARAKHAND	2012	38.8	11.9	28.1	39.2	9.1	46.0	387.1	419.5	220.6	
1354	1354	UTTARAKHAND	2013	73.0	188.3	22.0	24.7	18.2	488.9	413.4	359.4	111.3	
1355	1355	UTTARAKHAND	2014	45.9	99.9	68.4	37.6	52.9	62.9	462.7	264.2	107.9	
1356	1356	UTTARAKHAND	2015	54.5	62.6	127.3	57.3	38.0	186.6	337.0	305.3	52.6	

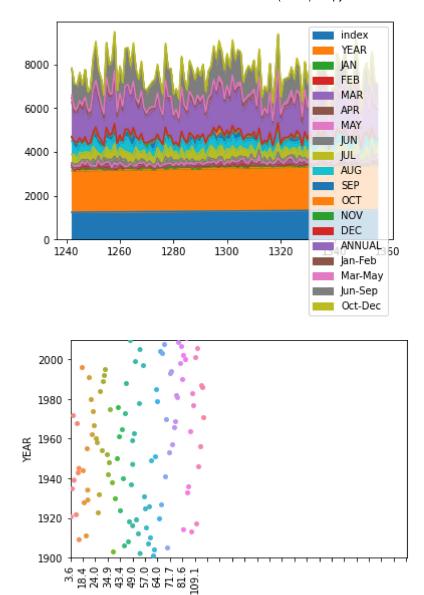
115 rows × 20 columns

```
In [5]:
        dat1.plot.bar("YEAR","MAY")
        plt.xlim(0,20)
        plt.figure(figsize=(60,30))
        plt.show()
        dat1.plot.box()
        plt.xlim(2,14)
        plt.ylim(0,2000)
        plt.show()
        dat1.plot.area()
        dat1.plot.scatter("YEAR","MAY")
        sns.stripplot(x=dat1["MAY"],y=dat1["YEAR"],jitter=True)
        plt.ylim(1900,2010)
        plt.xlim(0,145)
        plt.xticks(dat1["MAY"],rotation="vertical")
        plt.gca().xaxis.set_major_locator(tic.MultipleLocator(base=10))
        plt.show()
        dat1.plot.hist()
```

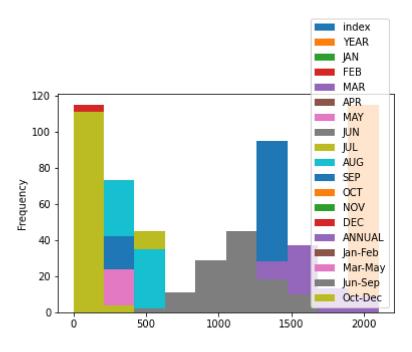


<Figure size 4320x2160 with 0 Axes>



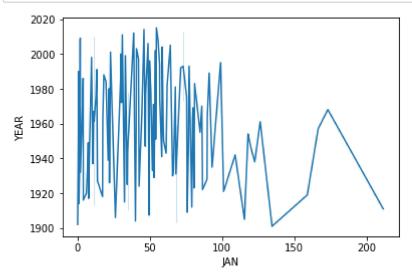


Out[5]: <AxesSubplot:ylabel='Frequency'>



MAY

```
In [6]: sns.lineplot(x=dat1["JAN"],y=dat1["YEAR"])
plt.show()
```



ASSAM & MEGHALAYA

In [7]: dat2=df[df["SUBDIVISION"]=="ASSAM & MEGHALAYA"]
 dat2

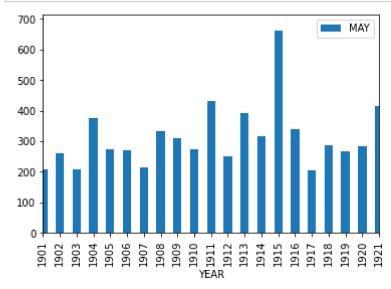
Out[7]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	oc
207	207	ASSAM & MEGHALAYA	1901	27.1	19.5	30.6	223.0	207.0	524.9	430.6	464.1	291.4	163
208	208	ASSAM & MEGHALAYA	1902	9.3	10.2	105.6	350.0	262.1	620.7	510.8	536.0	441.3	97
209	209	ASSAM & MEGHALAYA	1903	19.9	25.4	103.6	140.6	206.6	607.4	362.7	551.9	306.4	159
210	210	ASSAM & MEGHALAYA	1904	11.1	56.1	51.9	457.1	375.2	385.7	477.6	438.8	245.9	115
211	211	ASSAM & MEGHALAYA	1905	19.9	16.9	137.9	213.0	275.5	521.7	439.1	649.1	276.0	200
317	317	ASSAM & MEGHALAYA	2011	11.1	11.4	109.0	92.1	238.3	316.0	395.8	302.6	221.6	30
318	318	ASSAM & MEGHALAYA	2012	15.2	6.9	28.8	279.1	185.8	729.7	444.3	289.2	411.6	199
319	319	ASSAM & MEGHALAYA	2013	1.1	9.6	44.0	112.8	346.7	286.2	367.8	289.7	229.3	126
320	320	ASSAM & MEGHALAYA	2014	2.0	28.3	29.3	51.5	351.1	426.4	374.4	484.6	420.2	35
321	321	ASSAM & MEGHALAYA	2015	13.4	15.5	37.5	250.9	332.5	558.5	300.1	590.9	279.9	62

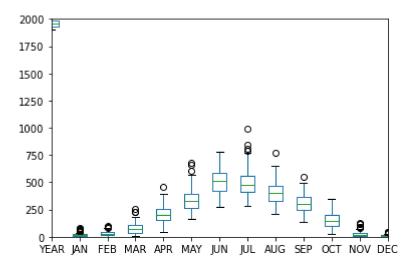
115 rows × 20 columns

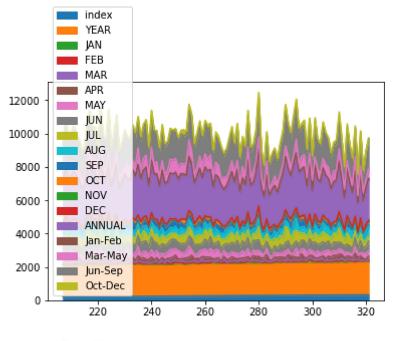
localhost:8888/notebooks/FR-(31-32).ipynb

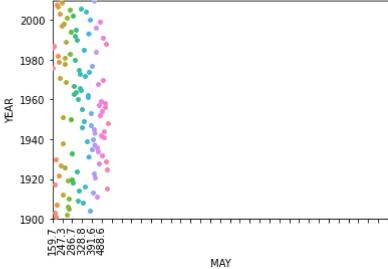
```
In [8]:
        dat2.plot.bar("YEAR","MAY")
        plt.xlim(0,20)
        plt.figure(figsize=(60,30))
        plt.show()
        dat2.plot.box()
        plt.xlim(2,14)
        plt.ylim(0,2000)
        plt.show()
        dat2.plot.area()
        dat2.plot.scatter("YEAR","MAY")
        sns.stripplot(x=dat2["MAY"],y=dat2["YEAR"],jitter=True)
        plt.ylim(1900,2010)
        plt.xlim(0,145)
        plt.xticks(dat2["MAY"],rotation="vertical")
        plt.gca().xaxis.set_major_locator(tic.MultipleLocator(base=20))
        plt.show()
        dat2.plot.hist()
        plt.show()
```

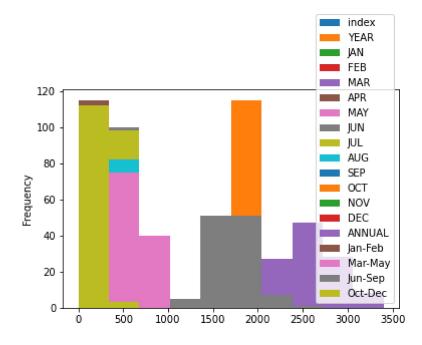


<Figure size 4320x2160 with 0 Axes>









In [9]: sns.lineplot(x=dat2["MAY"],y=dat2["YEAR"])
plt.show()

