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

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

Out[2]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	388.5
1	1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	197.2
2	2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	181.2
3	3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	222.2
4	4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	260.7
...	...	...	...	...	...	...	...	...	...	...	...	...	...
4111	4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2	117.4
4112	4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8	145.9
4113	4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0	72.8
4114	4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2	169.2
4115	4115	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4	165.4

4116 rows × 20 columns

In [3]:
```python
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	OCT
1242	1242	UTTARAKHAND	1901	134.5	81.4	44.5	5.9	60.8	33.6	381.1	612.3	167.1	16.3
1243	1243	UTTARAKHAND	1902	0.0	17.0	52.2	63.7	52.1	113.1	444.1	327.5	220.4	31.9
1244	1244	UTTARAKHAND	1903	68.0	7.9	87.6	10.3	37.5	83.0	251.6	442.7	249.3	57.5
1245	1245	UTTARAKHAND	1904	40.0	5.2	78.3	13.6	61.1	180.1	449.6	417.2	174.1	6.3
1246	1246	UTTARAKHAND	1905	115.4	80.7	99.8	26.1	70.3	111.5	299.9	349.5	129.5	0.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...
1352	1352	UTTARAKHAND	2011	30.9	65.2	18.0	30.9	84.2	223.1	433.3	523.7	148.4	3.4
1353	1353	UTTARAKHAND	2012	38.8	11.9	28.1	39.2	9.1	46.0	387.1	419.5	220.6	4.7
1354	1354	UTTARAKHAND	2013	73.0	188.3	22.0	24.7	18.2	488.9	413.4	359.4	111.3	29.1
1355	1355	UTTARAKHAND	2014	45.9	99.9	68.4	37.6	52.9	62.9	462.7	264.2	107.9	40.8
1356	1356	UTTARAKHAND	2015	54.5	62.6	127.3	57.3	38.0	186.6	337.0	305.3	52.6	16.8

115 rows × 20 columns

In [5]:
```python
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()
```
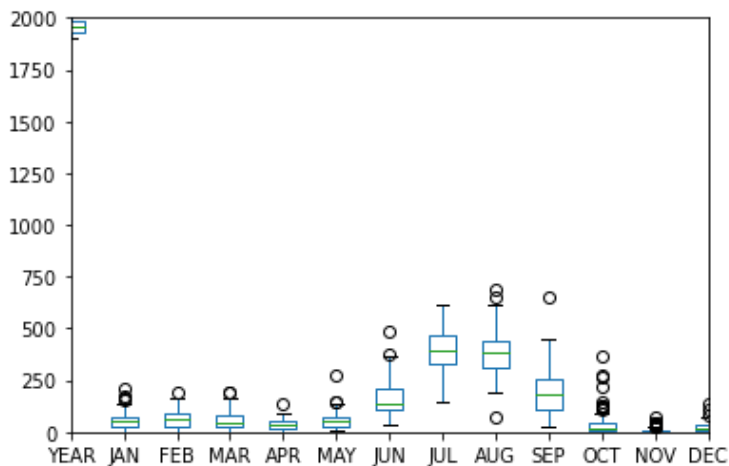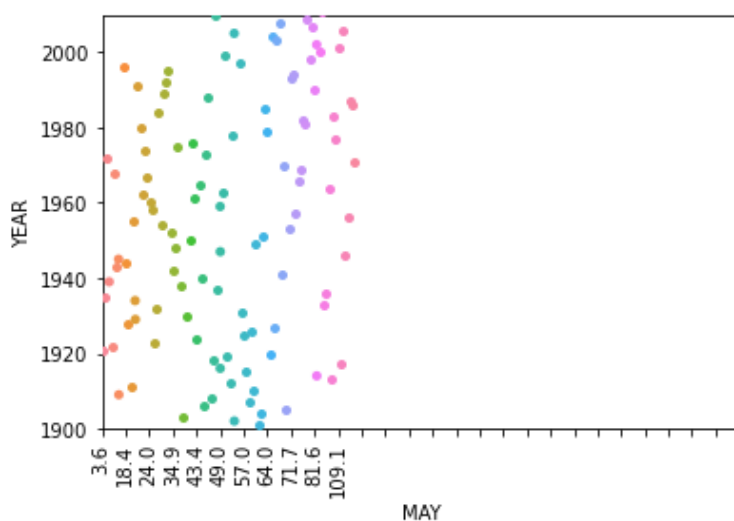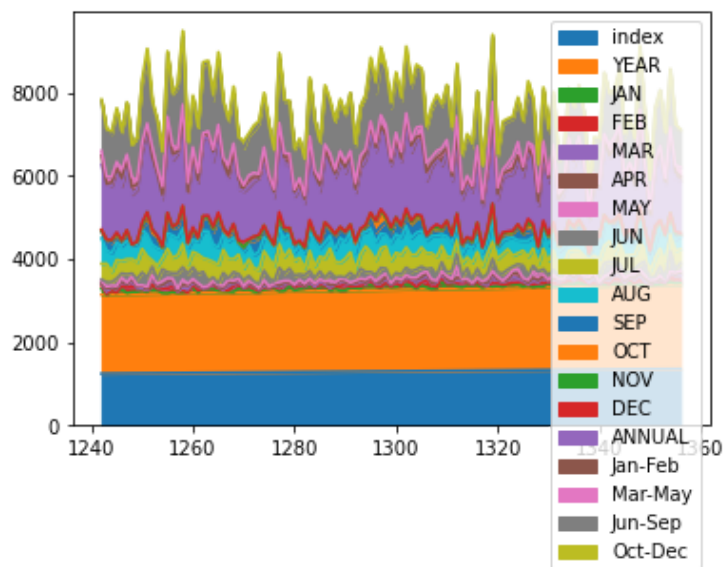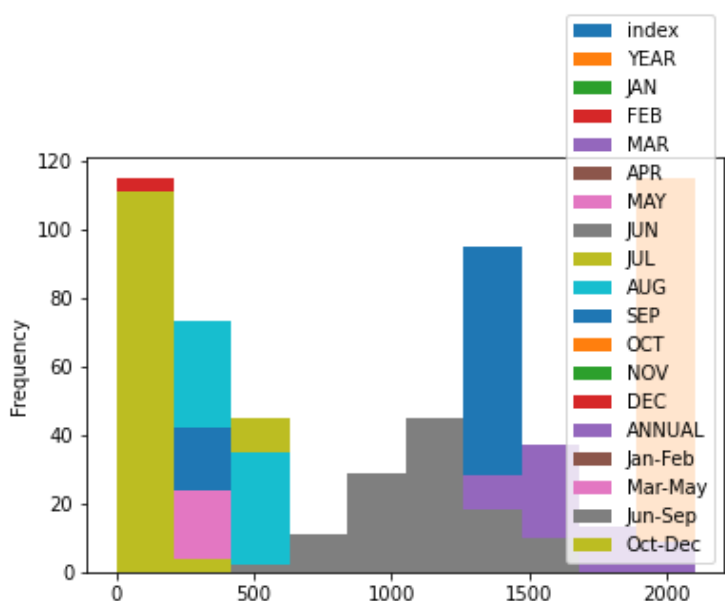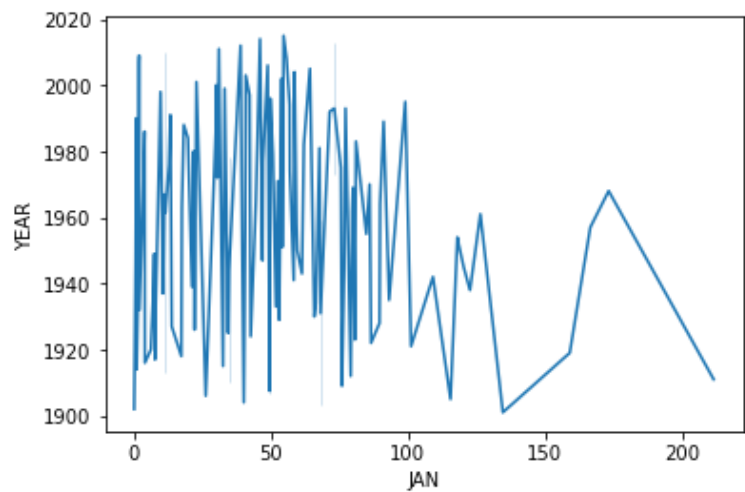

<Figure size 4320x2160 with 0 Axes>
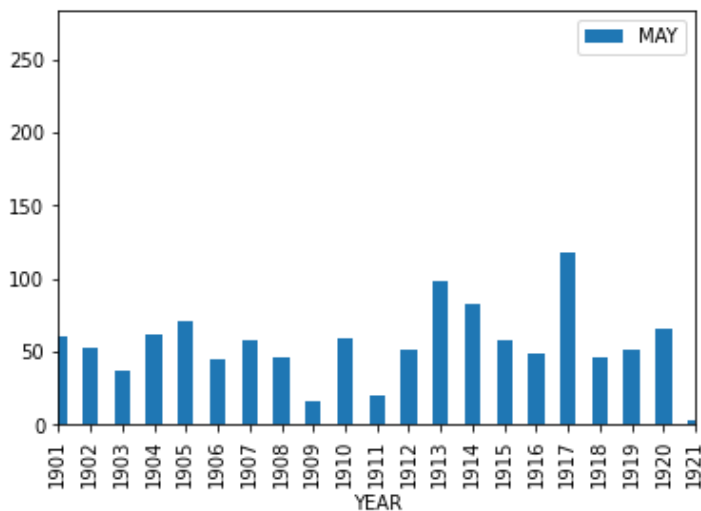
Out[5]: <AxesSubplot:ylabel='Frequency'>

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


ASSAM & MEGHALAYA

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

Out[7]:

|	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NC
207	207	ASSAM & MEGHALAYA	1901	27.1	19.5	30.6	223.0	207.0	524.9	430.6	464.1	291.4	163.7	115
208	208	ASSAM & MEGHALAYA	1902	9.3	10.2	105.6	350.0	262.1	620.7	510.8	536.0	441.3	97.0	7
209	209	ASSAM & MEGHALAYA	1903	19.9	25.4	103.6	140.6	206.6	607.4	362.7	551.9	306.4	159.5	59
210	210	ASSAM & MEGHALAYA	1904	11.1	56.1	51.9	457.1	375.2	385.7	477.6	438.8	245.9	115.9	46
211	211	ASSAM & MEGHALAYA	1905	19.9	16.9	137.9	213.0	275.5	521.7	439.1	649.1	276.0	200.0	16
...	...	...	...	...	...	...	...	...	...	...	...	...	...	
317	317	ASSAM & MEGHALAYA	2011	11.1	11.4	109.0	92.1	238.3	316.0	395.8	302.6	221.6	30.2	11
318	318	ASSAM & MEGHALAYA	2012	15.2	6.9	28.8	279.1	185.8	729.7	444.3	289.2	411.6	199.4	17
319	319	ASSAM & MEGHALAYA	2013	1.1	9.6	44.0	112.8	346.7	286.2	367.8	289.7	229.3	126.3	1
320	320	ASSAM & MEGHALAYA	2014	2.0	28.3	29.3	51.5	351.1	426.4	374.4	484.6	420.2	35.0	3
321	321	ASSAM & MEGHALAYA	2015	13.4	15.5	37.5	250.9	332.5	558.5	300.1	590.9	279.9	62.6	14

115 rows × 20 columns

In [8]:
```python
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>
```
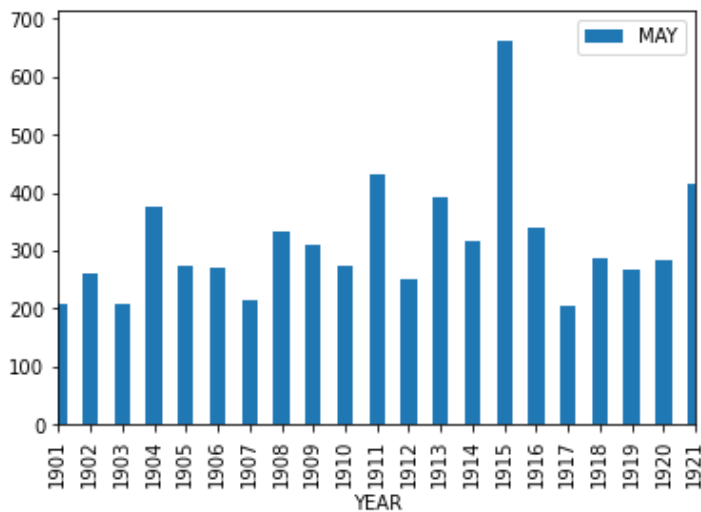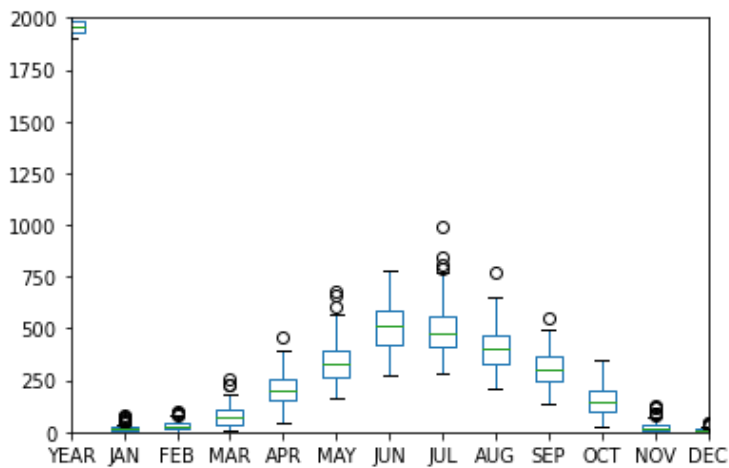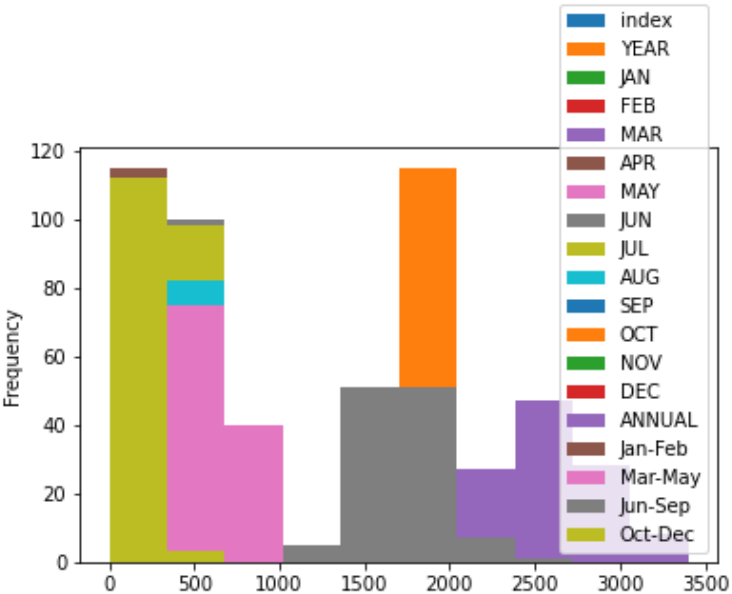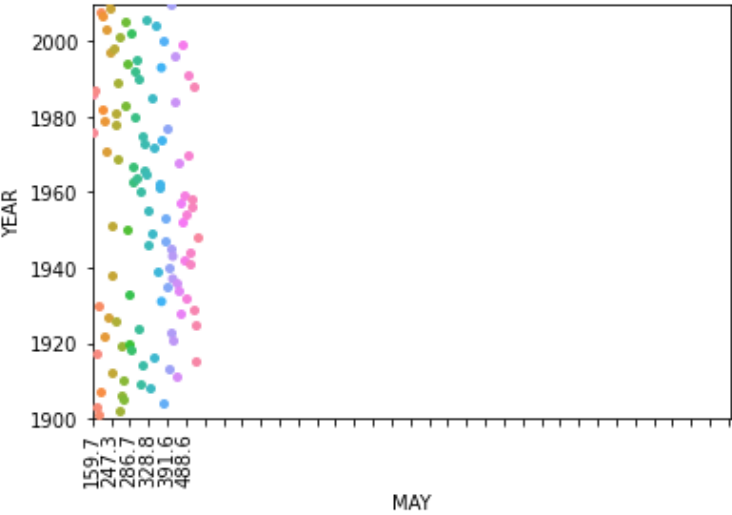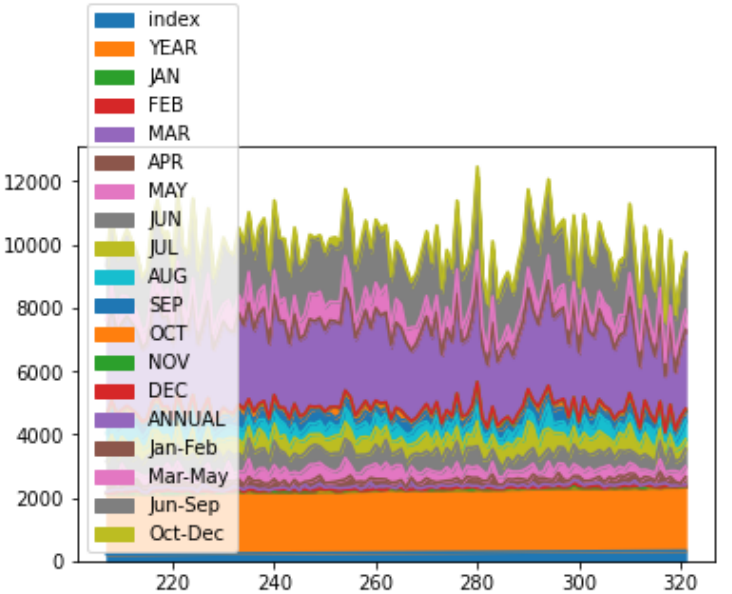
In [9]:
```python
sns.lineplot(x=dat2["MAY"],y=dat2["YEAR"])
plt.show()
```