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
0	0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6
1	1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2
2	2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0
3	3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4
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	4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2
4112	4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8
4113	4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0
4114	4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2
4115	4115	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4

4116 rows × 20 columns

```
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]:
```python
dat1=df[df["SUBDIVISION"]=="UTTARAKHAND"]
dat1
```

Out[4]:

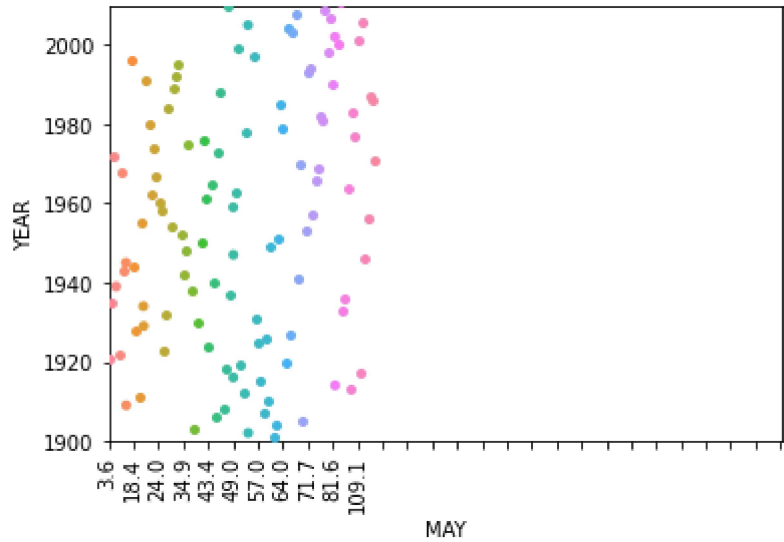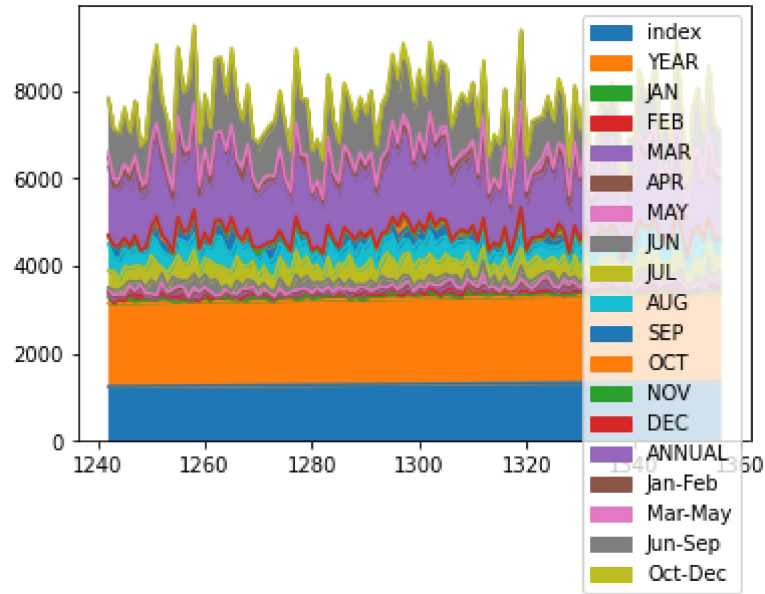|	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1242	1242	UTTARAKHAND	1901	134.5	81.4	44.5	5.9	60.8	33.6	381.1	612.3	167.1
1243	1243	UTTARAKHAND	1902	0.0	17.0	52.2	63.7	52.1	113.1	444.1	327.5	220.4
1244	1244	UTTARAKHAND	1903	68.0	7.9	87.6	10.3	37.5	83.0	251.6	442.7	249.3
1245	1245	UTTARAKHAND	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]:
```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()
```
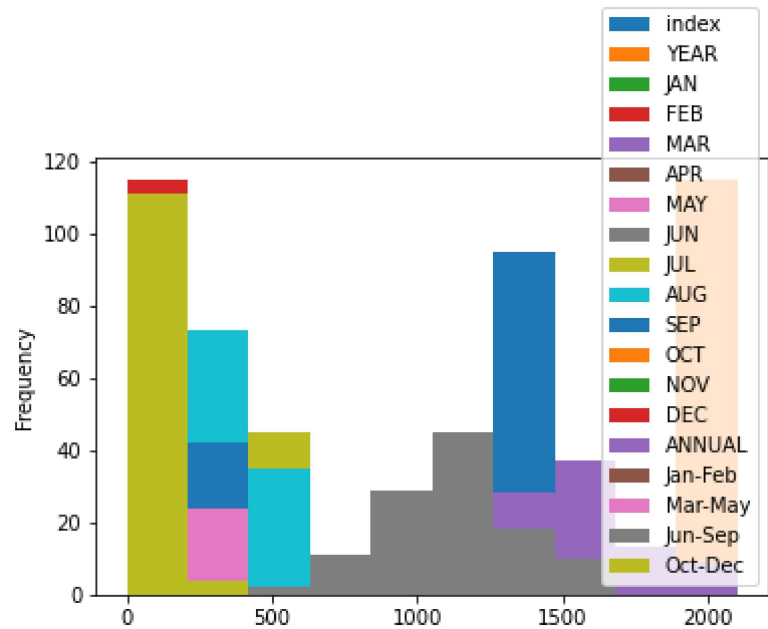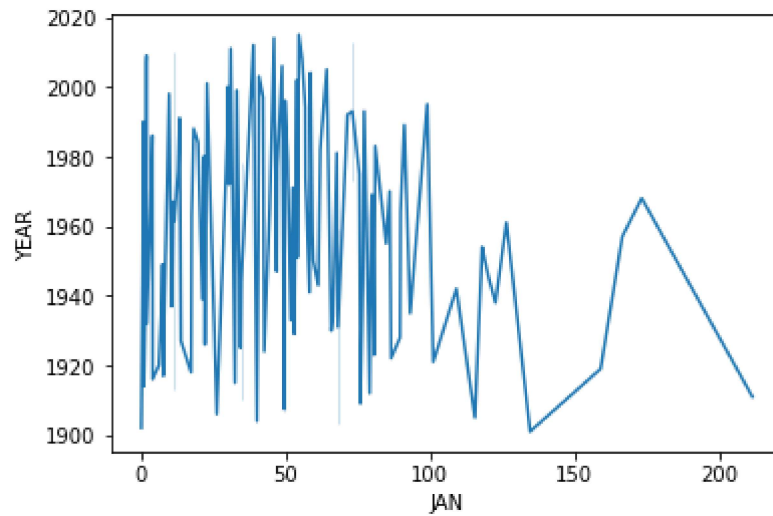


```
<Figure size 4320x2160 with 0 Axes>
```
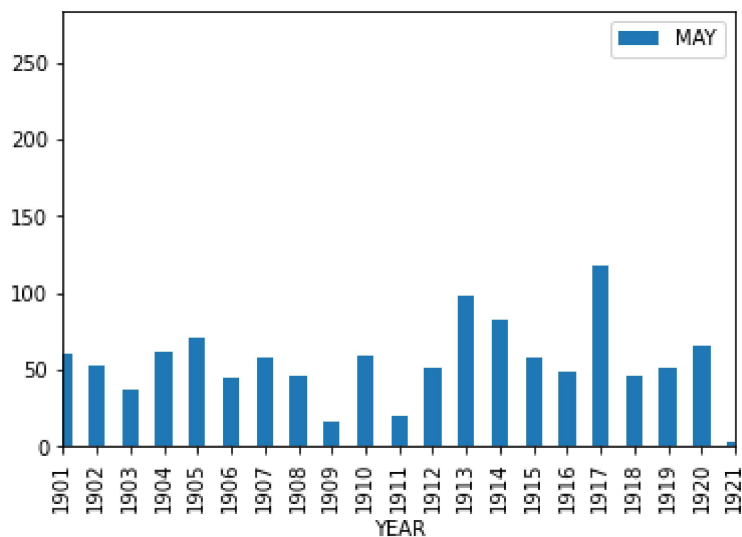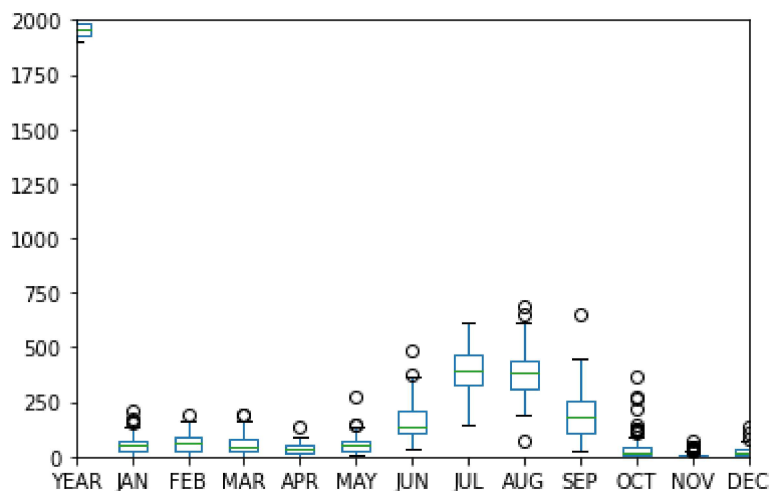
Out[5]: <AxesSubplot:ylabel='Frequency'>

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


ASSAM & MEGHALAYA

In [7]:
```
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

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()
```
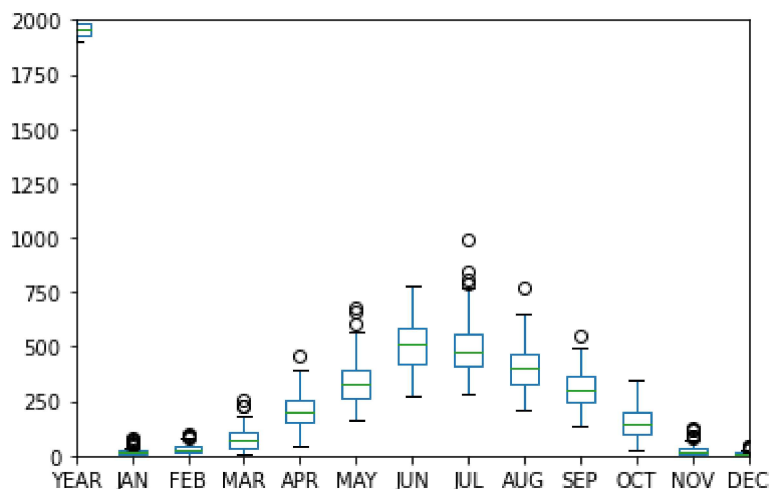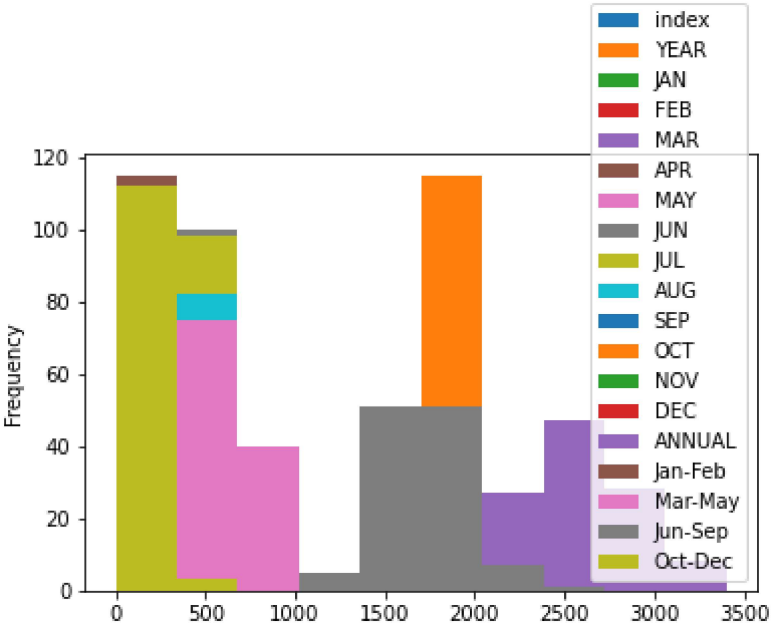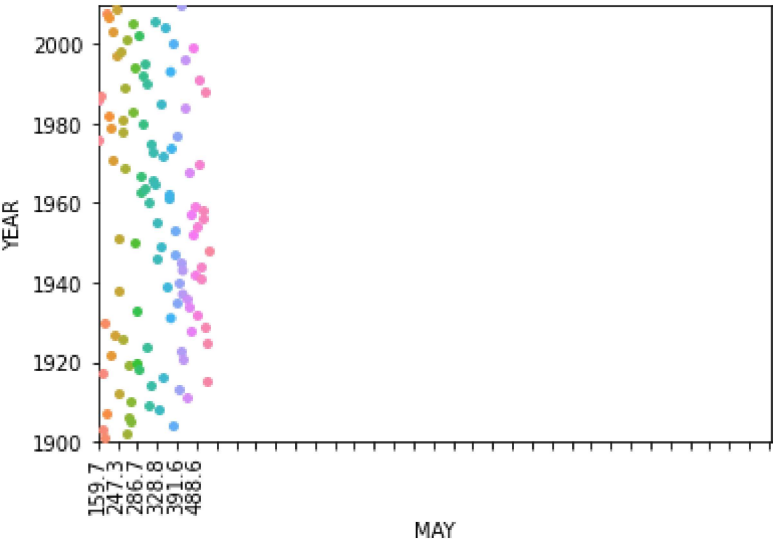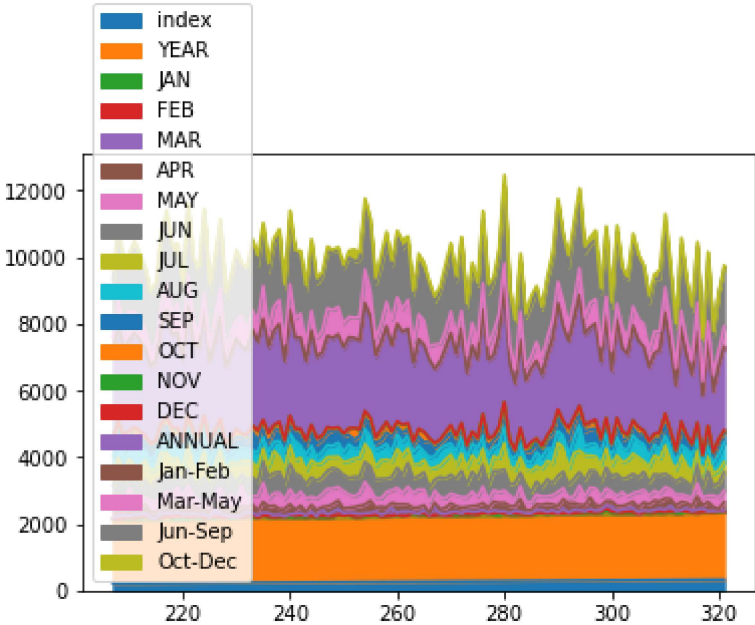


```
<Figure size 4320x2160 with 0 Axes>
```
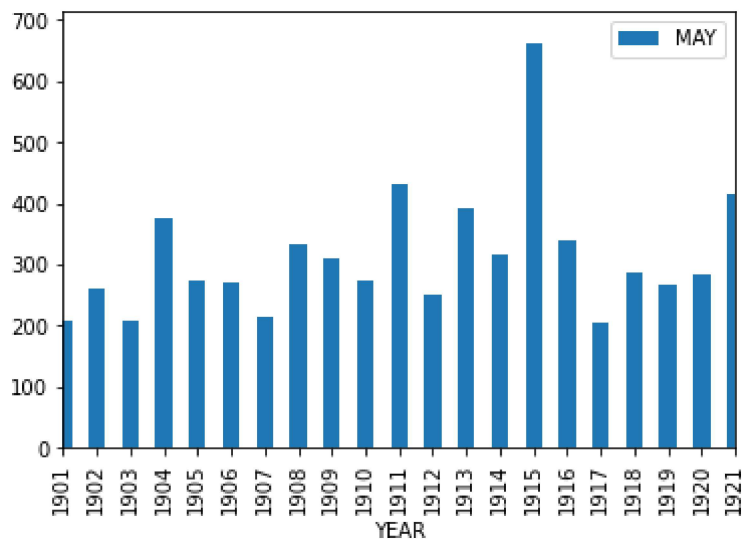
In [9]:
```python
sns.lineplot(x=dat2["MAY"],y=dat2["YEAR"])
plt.show()
```